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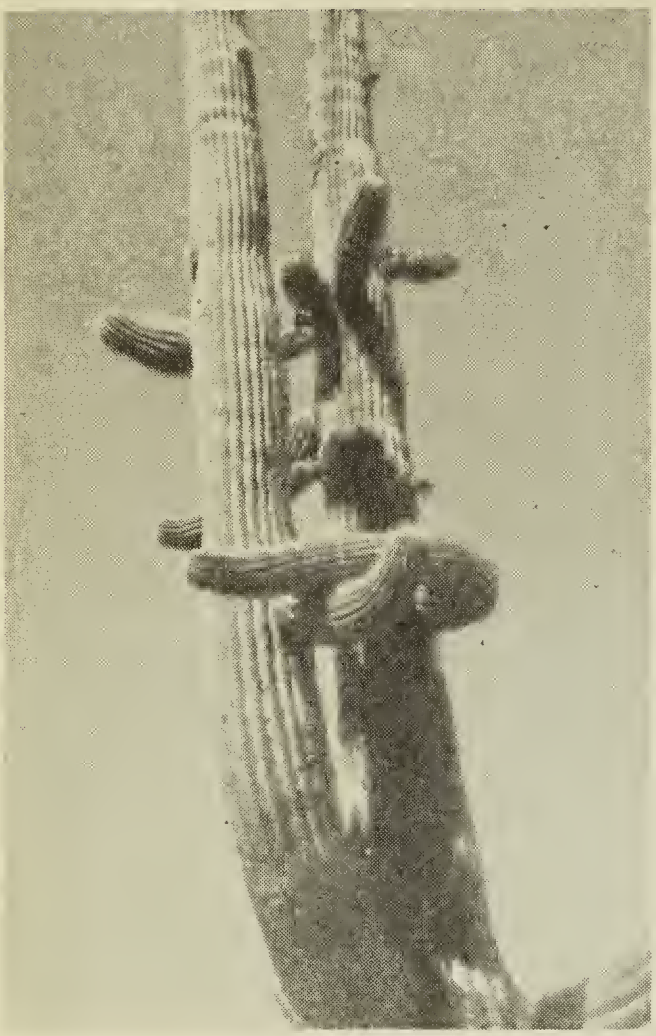
HE Blue Jay

Vol. XXII, No. 4 SASKATOON, SASK. December, 1964

aguaro Photo by G. F. Ledingham

Published quarterly by
THE SASKATCHEWAN NATURAL HISTORY SOCIETY
REGINA, SASK.

BLUE JAY CHATTER



Saguaro by Mrs. R. E. Swain

The saguaro, *Cereus giganteus,* is a giant cactus conspicuous in the Sonoran Desert of southern Arizona and northern Mexico. It grows to heights of nearly 30 feet and may be as much as 18 inches in diameter. Every Canadian travelling to Arizona, as Mrs. R. E. Swain has done, has brought home pictures of this important desert dominant.

The saguaro (pronounced sa-war'-o) has been used as a nest site by woodpeckers and owls and it may be gnawed or eaten by a few mammals, apparently mostly for moisture, but surely it is immune to tourist pressure. It would seem that a park in the Sonoran Desert would ensure its future and allow millions of people to visit it and marvel as its adaptations to its harsh environment.

Listening to the thought-provoking address of Mr. R. York Edwards at our annual meeting (page 134), in which he explained that some things can be enjoyed without damage while other beauties of nature are soon destroyed by the big feet of people, one could not but think of his own special nature spots. I thought, for instance, of the saguaro.

Having once seen and marvelled at the saguaro I would think it almost indestructible, yet conservationists have, since 1880, been worried about the future of this giant cactus. Although larger plants may produce as many as 400,000 seeds, few of these grow into mature plants. Even if the seeds fall in locations where they can germinate they may be washed out, eaten by rodents, or frozen. Growth in early years is slow. It takes a plant 10 years to reach a height of one inch and 20-50 years to reach a height of three feet. Mature plants may reach an age of 200 years but they may be killed by frost, by bacterial necrosis or from washing out of roots.

Environmental extremes, however, do not affect the reproduction and survival of the saguaro as much as man's intrusion, as is pointed out by W. A. Niering *et al* in *Science,* 142:15-23, October 4, 1963.

The many cattle brought into the Sonoran Desert following 1880 resulted in serious overgrazing, erosion, and lowering of water tables. There was little or no reproduction of the saguaro especially on finer soils in overgrazed areas. The saguaro is, therefore, likely to disappear except on ungrazed slopes of desert mountains or in undisturbed paloverde-bursage desert. The splendid saguaro forest which the famous Saguaro National Monument near Tucson was created to preserve is much deteriorated and much effort will be required to prevent further deterioration.

If even the giant saguaro needs protection against man and his domestic animals and if the park near Tucson has not been effective in ensuring its future, then we must carefully examine the needs of all of our native plants and animals to see what their chances of survival are. The welfare of all our wildlife, not just the game species, is the concern of all people and we must see that more money and much more effort are expended on their behalf.

G. F. Ledingham.

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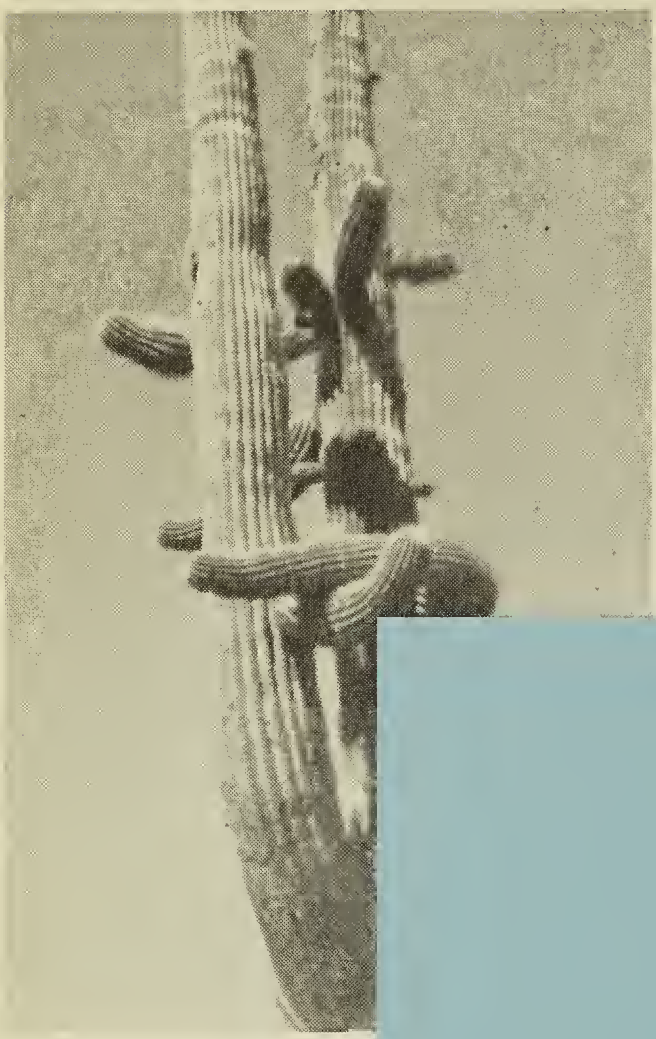
BLUE JAY CHATTER



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PROF. WILLIAM A. S. SARJEANT
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SASKATOON, SASKATCHEWAN, CANADA

Preserving Nature in Parks*

by **R. Y. Edwards,** Victoria, B.C.

Some of you, I am sure, are going to be startled by what I have to tell you tonight. It would be so easy if I could give you the clear, simple message that we need more parks in which to preserve more nature. But the issue is more complex than this, as you will soon see.

There is much confusion abroad about parks and the preservation of nature, and there is nothing like confusion to foster wasted effort and to limit accomplishment. The preservation of nature in Canada will continue to be severely hampered until there is widespread understanding amongst us naturalists and amongst our friends over the limited role that parks can play in this preservation.

To put it bluntly, parks often destroy nature. At the same time, much nature is being preserved in some parks. So here in a nutshell is the confusing situation which I have been asked to talk about tonight.

Let me begin by telling you about a friend of mine. He earns a good living by guiding people into part of central British Columbia that is wilderness. Here I use "wilderness" in its oldest North American sense, to describe a land beyond the frontier of civilization, a land as yet completely untamed. For money—a lot of money—my friend will take you into some of the wildest country still to be found south of the far North. Here you will ride with a string of good pack horses, and sleep in canvas camps where the campfire cooking is plain, and good.

This friend of mine loves wild country. Excitement flashes in his eyes when he talks of a big bull caribou on a far skyline, or of ptarmigan chicks in the flowering heather; and his word pictures of superb mountain scenery are vivid verbal paintings that could only come from a deep love of what he saw.

Many of his customers are hunters. My friend is a hunter of sorts, but an unusual one. Animals are not valuable to him simply as meat, or as trophies, or as dollars from hunters; they are valuable for what they are, things alive and wild in wild country that is their native home. He regards the killing of a few animals as a regrettable necessity, so that he too can make a living in this wild and lonely country.

This man is a naturalist. He loves the earth and the wild things that live in wild places, and he works hard at understanding the things he sees in nature. What better naturalist can there be than this?

When you love something, you hope it will not be destroyed. Naturalists, because of their interests and because of the way they think, are forever hoping to preserve the nature that has given their lives beauty, and enthusiasm, and companionship, and a host of other satisfactions. Our wilderness naturalist is no exception. He has spent long hours in his saddle, and sleepless nights in his blankets, thinking about how to preserve the wonderful country he works in, the country that he thinks is the best that this earth can offer. Before he discussed his problem with anyone, he had most of his answers thought out. And at the time I am talking about, I must admit

---

**A paper given at the annual meeting of the SNHS in Regina, October 17, 1964.*

Sask. Gov't. Photo

"Keep your bulldozers out of there." Cypress Hills as seen from Bald Butte.

hat I had done little thinking about
uch matters.

Then, as now, I worked for British
olumbia's Provincial Parks Branch.
Ve believed that the parks in British
olumbia were not just good—they
vere among the best anywhere. These
vere the days when roadside camp-
rounds were still novel, yet numerous
nough to bring a chorus of heady
raise for our genius. And in a few
arge parks we had just put in enough
oads and buildings to convince our-
elves that we, not God, had made
hese parks. Looking back I am re-
minded of bantam roosters. We
hought ourselves important, and we
cted important, but the result was a
it ridiculous.

When my friend first talked of his
ream to preserve this wilderness, I
aturally thought that he was proposing this area for yet another glorious provincial park. I was wrong. I will never forget his look of astonishment when he realized what I was thinking.

"You're not serious," he said. "One of the surest ways to ruin that high bunchgrass country would be to make it a park. Keep your bulldozers out of there!"

Apparently one of his favourite nightmares was a vision of his Shangri-la full of roads, and cars, and people, and motor boats, and garbage, and Park Planners planning further desecrations.

He didn't want a recreation area. He wanted a natural area. He knew that in parks there may be much naturalness, but that recreation is apt to dictate how much naturalness—

how much nature—shall remain. Many a park is supposed to be a "natural area for the use and enjoyment of the people," but by the time the using and enjoying people have trampled all over the nature while using and enjoying it, there is not much doubt over whether recreation or naturalness is the dominant purpose of parks.

It's ten years now since my wilderness friend straightened me out. And since then I've been involved in the same plot several times, each time with a different hero and each time with different scenery on the stage. Recently the hero was a dear old lady, grown a bit vague for her many years, but she had lived much of her life on a bit of hillside on Vancouver Island, and she was not vague about wanting her little world of nature preserved, There were old Douglas firs on the property fit to make a logger's eyes shine, and she wanted to be sure that her giant trees stayed out of loggers' hands. She knew where the first trilliums bloomed, and where the calypso orchids were hidden in the springtime. She knew where the pheasants nested, and she knew the time on the calendar when the sea blush would paint the rocky hills with pink. And swallows came to her eaves every year. She wanted things like these to live after her, so she invited us to visit one day. We got along well as we viewed her treasures, then had tea. And then she told me: "I'll give it to the government as a park, and all I ask is that people be kept out." I was not strong enough to tell her, then, that the Act—the law—controlling my office says that parks are for people, and it does not even mention nature. Not all parks Acts are so lopsided, but I suspect many are.

So here again was a naturalist in love with land, trying to preserve it, and this time I was able to see that a park, in the usual sense, would not do what she wanted done. The big firs would be safe enough, but trilliums and orchids, and sea blush, and pheasant eggs, were not compatible with the big feet of concentrated humanity. Some nature can mix with people, some cannot. Until you know this there is danger of trying to do the impossible in parks. The moral of all this is clear and simple: nature is not always adequately preserved in parks when you want a gem of nature preserved put a park around it at its peril, for a park could be the las thing you want.

—I know some high mountain meadows so filled with flowers in summer that a park was made to preserve them. A road now cuts like an open sore in the earth across this high country, and too many trampling feet are destroying the very flowering plants that attract them. The nature that is so attractive is dying from too much popularity.

—I know another park paradise in the clouds where feet have not just killed the delicate alpine vegetation the feet have left the soil naked to the heavy rains of the coast mountains, and deep, ugly ditches, carved by erosion, have scarred the scenery forever.

—I know where once in a park was a lovely old stabilized rockslide at the foot of a steep mountain slope. The rocks were green with mosses, and among the rocks was the only rock rabbit colony to be found for miles. Rock rabbits are real little rabbits with short ears that live in tumbled rocks. Anyone who knows the mountains of the northwest has fond memories of rock rabbits sitting fully exposed on rocks, calling greetings to hikers as they pass. There are now no rock rabbits, and no rockslide in this place. My favourite rockslide was in a park, but parks have roads, and roads need rock. Where once were rock rabbits among mossy old rocks there is now a scar on the mountain slope decorated with some oil cans and bits of rusting machinery.

—I know many parks where roadside flowers turn the brown of sudden death each summer when they are touched by "weed killers," and where this ugly blot on the landscape is considered to be efficient park management.

—I know parks where the dead and dying trees to be found in almost every healthy forest are considered eyesores or perhaps they are just vaguely labelled dangerous, but in any event they are things to cut down, and to cut up. A need for firewood is

"Trampling feet are destroying the very flowering plants that attract."

usually involved to complicate the motives for removing these trees, but regardless of purpose, this practice removes habitat for a host of forest animals, from ants to woodpeckers. Someone has said that a tree is never so alive as when it is dead. By this standard, many a park forest is not very much alive.

—And I know parks—often the same parks where money is wasted on removing dead trees—where living trees are defended with a fervor akin to old-time religion and heaven help the bird, or mammal, or insect that eats trees. One wonders when parks are not parks at all but tree farms; and when park management will shake itself free of cellulose forestry.

—I know parks where

—horses eat away the show of wild flowers every year.

—where people carry off boxes filled with mountain plants for their gardens.

—where park wardens set snares for wolves.

—where government men drop deadly 1080 baits from aircraft.

—where sprays deadly to animals fall from the sky every year.

—where there is logging with all the destruction and mess and tangle and clatter that must result from logging.

—where cattle graze unrestricted.

—where exotic species are deliberately introduced into the park fauna by the park administration.

—where just about any destructive force that you can think about is to be found destroying natural fauna, or flora, or geological features, or things of historical value.

This is a sad picture that I am painting, and I must take care not to overdo it. But I have painted it because the most important message that I can give you tonight is this: "Beware of parks as nature preserves."

Appropriate here is the philosophy of an old southern gentleman, found sitting contentedly in the sun. He was asked the secret of attaining a happy old age, and he said: "I avoids the impossible, and I co-operates with the inevitable." This sounds like a successful formula.

Avoid the impossible. Don't try to preserve delicate nature in a park that will destroy it.

Co-operate with the inevitable. If a park won't do the job, call a spade a spade and try to establish a nature preserve or something equivalent. Ontario has a growing number of nature preserves, some purchased by naturalists' organizations, and some established by government under a so-called Wilderness Act. I don't agree with the use of the word "wilderness" here, but the result is impressive, regardless.

Canada needs to preserve bits of undisturbed wild land. We must do this for the same reasons that our museums preserve old steam engines, or old furniture, or old dinosaur bones. By comparison, it is far more important to preserve parts of the countryside. I don't want to belittle the great value of old bones, or of antique engines, but they cannot have nearly the importance, today or tomorrow, of a living, breathing metropolis of plants and animals located where it belongs on native ground.

As a Canadian, as a forest dwelling Canadian, I am disturbed at how little I hear about nature preserves on my prairies. Perhaps I am just out of touch, and much is happening that I haven't heard. I will be delighted to hear that this is so.

I have, however, heard about your thoughts of a large grassland park in your southwest, and I find the idea exciting—with some misgivings over the word "park" which you will now understand.

Because of these misgivings, I wonder if everyone is clear on what is wanted—or needed.

—Are you after preservation as rea and as full as possible? This is difficult to do politically for i may lose votes and will probably gain very few, but in practice it is easy to do—you just lock up the countryside.

—Or, are you after preserved prairie on show to the interested public? With people trampling about there will be problems in preserving prairie, but it can be done with good planning and a few compromises.

—Or are you after prairie of any quality as an atmosphere in which people will recreate according to their wishes? This is simply providing space with prairie flavour. Space, with flavour, is about all that most National and provincial parks provide. Are you after such a park?

Again, don't misunderstand me. Much nature is preserved in Canada's parks. But this preservation is usually a partial thing, as was clearly stated by Resources Minister Laing in his encouraging statement on National parks policy made in September. I wonder if native prairie can withstand only partial protection, and remain anything worth protecting from the naturalist's point of view. A million people can come to look at a mountain, and the mountain will still be there. Fifty thousand people can beat a path to a Douglas fir, and it will still be there next year unchanged. But long before a hundred people have come to see a little prairie anemone, there won't be much left to see. Prairie vegetation cannot withstand Coney Island use.

But Canada needs a national prairie park or prairie preserve of some kind. If it not already too late, suddenly, very soon, it will be too late. As with the Passenger Pigeon, too late is a frighteningly final condition.

I suggest that we should have both a national prairie park, and a national prairie preserve, side by side. The park would be for people to walk in, and camp in, and drive in, a place in which to learn something of the old prairie where a man can stand in wild space and look to the rim of a wild world. Future generations must know old prairie, not from books, but from experiencing it and if this human use, this park use, should leave some of the prairie park a bit shopworn, inspired park planning and careful park management will help to keep the damage to a minimum.

Adjacent to this park a prairie preserve should serve science, and education, and the great human need to understand. One part of the preserve, an inaccessible part perhaps, should be an outdoor laboratory and classroom for intensive study. This research area should serve mankind with knowledge, so that the prairie which almost vanished before we knew it, will still be better understood. The rest of the preserve should be devoted to controlled use by visitors confined to paths and trails, with interpreters—like park naturalists—explaining the wonders of the grasslands, and doing this by using all the tested techniques that Park Naturalists use throughout North America. Here there should be a museum, guided walks, outdoor talks, nature trails, booklets, and these could easily attract tens of thousands of Canadians a summer. This is no wild prediction. Last summer, in hundreds of less glamourous places throughout North America, naturalist interpreters were swamped by millions and millions of people eager to hear what they had to say. Prairie interpretation would pack them in; and good planning would save much of the prairie from damage too.

In many parks in America today there are zones of protection such as I describe here. Rarely, however, are these zones planned zones. They are rather accidents of time and space and the limited mobility of people. Sooner or later the unused lands in these parks will be trampled unless policy changes.

In Canada's prairie shrine, preservation by chance would not be good enough. Rather planning and management must ensure prairie for recreation, prairie for interpretation, and prairie for scientific investigation.

Give me a prairie monument like this, and I would have another major reason for wanting to know Saskatchewan.

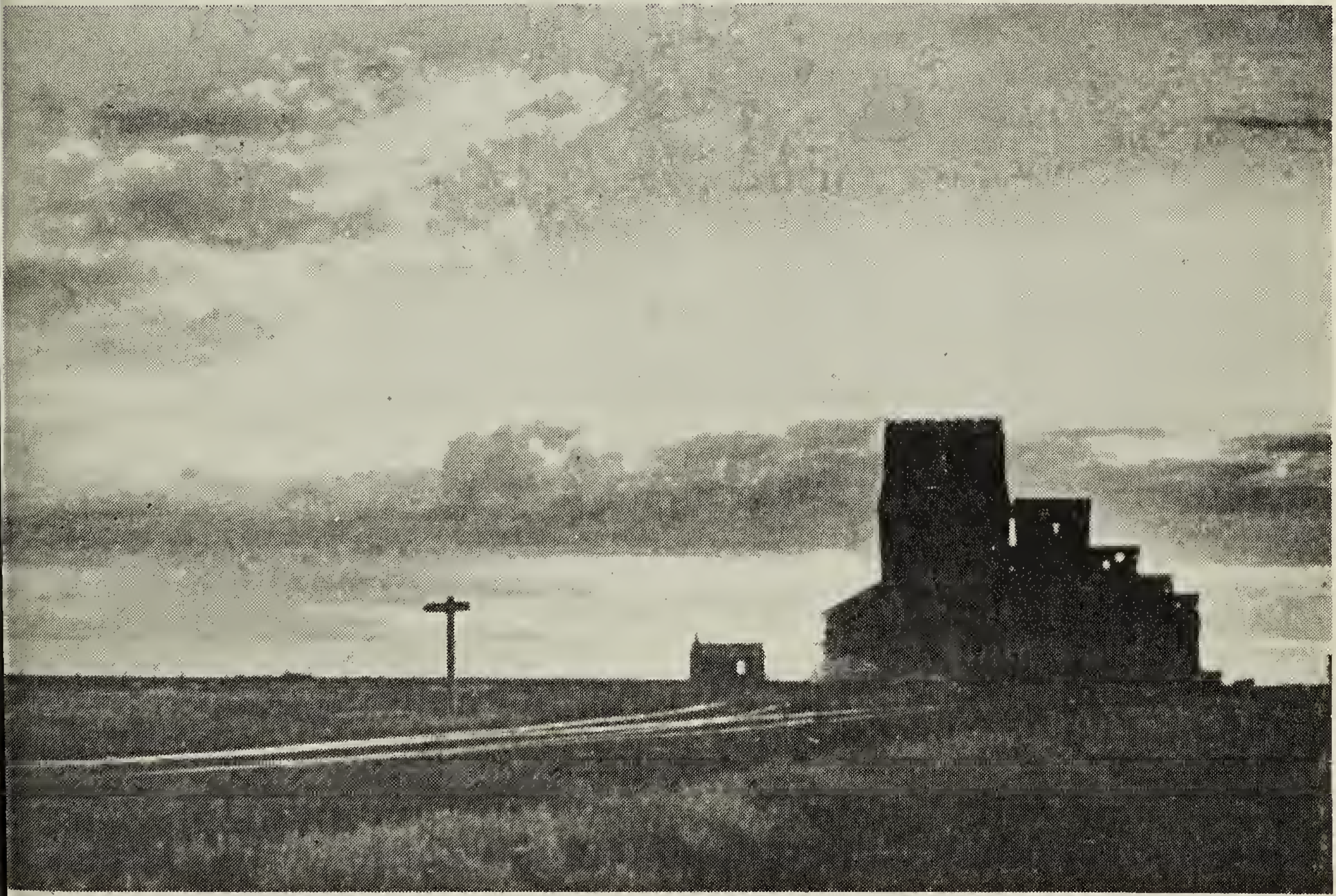

Photo by Dick Bird.

'Canada needs a national prairie park or prairie preserve of some kind."

Notes on the Western Race of the Pigeon Hawk

by **Glen A. Fox,** Saskatchewan Falconry Association, Regina

Photo by C. G. Hampson

Immature female *Falco columbarius richardsonii*

Although it is widely distributed in North America, the Pigeon Hawk or Merlin *(Falco columbarius)* has not been studied extensively. The eastern subspecies *F. c. columbarius* has been the subject of brief papers by Craighead and Craighead (1940) and Lawrence (1949). However, Bent (1938) gives the only account of the life history of the plains or western subspecies *F. c. richardsonii.* Friedmann (1950) gives an account of the distribution of this subspecies and brief notes are scattered throughout the literature.

I studied this subspecies on its breeding grounds during 1958, 1959, and 1960 at 15 active nests in the general vicinity of Kindersley, Saskatchewan.

To supplement this information I used further nesting records from the files of the Prairie Nest Records Scheme. Information concerning sex, age, and stomach contents of specimens as well as descriptions of clutch size and nests from which they came, was supplied by personnel of museums in both Canada and the United States. Letters of inquiry were sent to all falconers and ornithologists known to be familiar with this subspecies. A request for information appeared in the *Wilson Bulletin* on my behalf. The bulk of the material on non-breeding birds and captives contained herein was obtained from these sources.

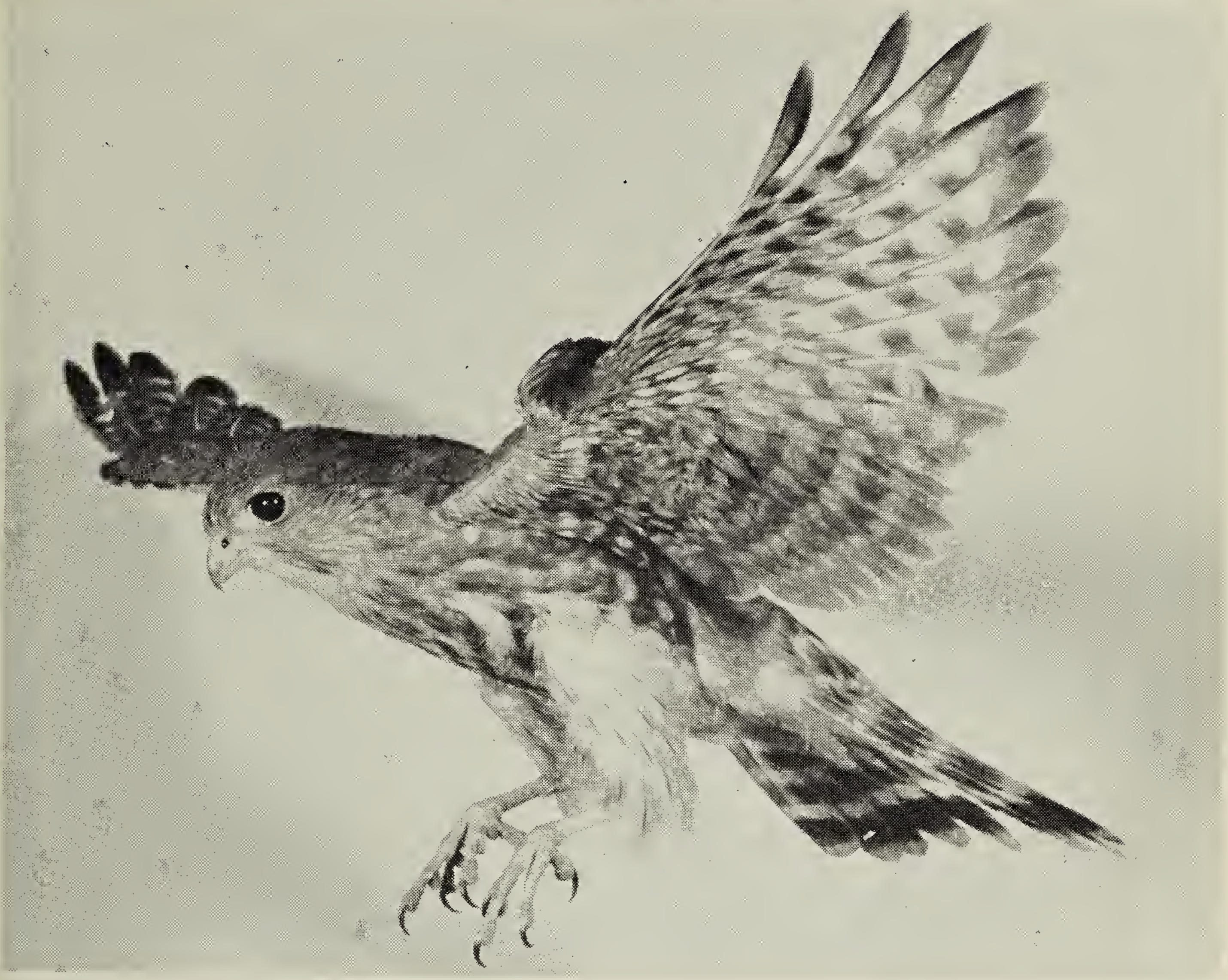

Photo by C. G. Hampson

Immature female *Falco columbarius richardsonii*

DISTRIBUTION

According to the A.O.U. Check-list (1957) *F. c. richardsonii* "breeds in the prairie and grove belt of southern Alberta (Lac la Nonne, Red Deer River, Calgary), southern Saskatchewan (Carleton, Pelly), and southwestern Manitoba (Oak Lake) south to northern Montana and northern North Dakota. Winters from Wyoming (Green River, La Bonte Creek, Bridger Mountains) and Colorado (Walkers Basin; El Paso, Boulder, and Larimer counties) to California (uncommon), Sonora, Zacatecas, and Tamaulipas. Migrates through South Dakota, central and western Nebraska, and Kansas; casual in British Columbia (Okanagan Landing), Missouri (Stone County), Illinois (Warsaw), Iowa, and Oklahoma."

Examination of recent literature, museum specimens from institutions mentioned elsewhere, and sight records by competent observers generally supports the distribution outlined above.

Enderson (pers. corr. 1961) describes a nest found in Albany County, Wyoming, which he believed to be of this subspecies but no specimens were taken. The Wyoming Game and Fish Commission (pers. corr. 1961) report that a member of their staff, Mr. Robert L. Patterson, located a nest of this subspecies in Weston County, Wyoming, in the 1950's but no specimens were taken. These sight records may represent an extension of the breeding range.

Breeding records for Saskatchewan include the following locations: Kindersley, Battleford, Cypress Hills, Beechy, Harptree, Eastend, Craven, Nokomis, Nipawin, Prince Albert, Wolseley, Yorkton, Moose Jaw, Crescent Lake, and Fort Qu'Appelle. These records are from the author's own observations, the files of the Prairie Nest Records Scheme, and from Museum specimens.

BREEDING BIOLOGY

Nesting Habits:

Pigeon Hawks show a tendency to breed in mixed woods, along river banks and islands, and in natural prairie areas. Some preference is shown for shelterbelts of deserted farms, especially where the trees are spaced well apart and bare of branches for eight to ten feet from the ground. About half of the nests seen on the prairies were within one-half mile from water. Deciduous trees of the following types were used: aspen poplar *(Populus)*, box elder *(Acer)*, willow *(Salix)*, and birch *(Betula)*. The coniferous trees used were the white spruce *(Picea glauca)*, and jack pine *(Pinus banksiana)*. Nests were from 8 to 35 feet above the ground. Almost all nests were situated in the upper half of the tree and as close to the trunk as possible. Vacant nests of the Black-billed Magpie and the Common Crow or natural cavities are habitually occupied. For a summary of this data see Table 1.

Table 1. Nesting habits of the western race of the Pigeon Hawk*

	Number of Nests	Per Cent
Habitat:		
Open prairie, vacant farm shelterbelts	7	28
Mixed woods, bluffs, river edges and islands	12	48
Coniferous forest	6	24
	25	100
Nest Site:		
Deciduous tree	21	84
Coniferous tree	4	16
	25	100
Height of Nest:		
5 to 14 feet	10	40
15 to 24 feet	13	52
25 to 35 feet	2	8
	25	100
Type of Nest:		
Former nest of Common Crow	13	52
Former nest of Black-billed Magpie	10	40
Natural cavity in tree	2	8
	25	100

*Data from author's observations, files of Prairie Nest Records Scheme, and Museum specimens.

Arrival on Breeding Areas and Behaviour:

The male Pigeon Hawks arrive on the breeding territory in late February or early March. The females arrive about a month later. Each member of the pair has a favorite perch, often a branch of a tall dead tree, which overlooks the territory. Observations of eight nests show that the territory is defended against human intruders from the date of the male's arrival, with peak intensity when the young are about two weeks old, then decreasing rapidly in intensity until such defence disappears about a month after the young are fledged. Both sexes participate in defence, the female being the more aggressive in most cases. Frequently the human intruder is met by a screaming male while still one-half mile distant from the nest. Actual striking of human intruders has been observed. The same areas are frequently occupied in successive years, although the same nest is not always used, especially if young were fledged in the previous year.

Relationship with Other Species:

Table 2 summarizes observations of interspecific relations. Male Pigeon

Hawks have been observed driving crows from their territory by stooping close, and on one occasion, by striking the intruder. Crows, magpies, Swainson's Hawks, and Ferruginous Hawks nest within Pigeon Hawk territories but no encounters have been observed.

In mid July, 1959, a party of one Robin, a pair of Baltimore Orioles, one Common Grackle, and several House Sparrows mobbed my captive male in an outdoor pen. At this time these usually timid birds permitted my close approach, constantly watching the Pigeon Hawk and protesting loudly. After some time they ventured closer, the grackle trying to gain entrance to the pen. When I dispersed them they returned almost immediately, the grackle arriving first.

Beebe, in describing (pers. corr. 1961) the encounters of his tame female, listed in Table 2, emphasizes its intolerance of accipiters. Antagonism between the Pigeon Hawk and any larger falcon seemed to be intensified if the larger bird took quarry.

Egg-Laying, Incubation and Brood Size:

Egg-laying commences on the Canadian prairies during the first two weeks of May or approximately six weeks after the male first establishes the territory. The duration of egg laying in the aeries under observation was from May 4 to June 5, with the peak on May 20. Detailed observations of two nests, and records for the duration of the laying period in three others, show that the average interval between eggs is 48 hours.

Table 2. Interspecific antagonism

Chased by Pigeon Hawks:	**Observer**
Common Crow	Sealy
Clark's Nutcracker	Enderson
Peregrine Falcon	Hampson, Beebe
Prairie Falcon	Hampson
Great Horned Owl	Hampson
Sparrow Hawk*	Beebe
Sharp-shinned Hawk*	Beebe
Cooper's Hawk*	Beebe
Pigeon Hawks chased by:	
Red-winged Blackbird	Fox
Eastern Kingbird	Fox
Red-eyed Vireo	Hampson
Yellow Warbler	Hampson
Robin	Street
Sparrow Hawk*	Beebe
Peregrine Falcon*	Beebe

*Encounters involving tame female Pigeon Hawk.

The mean clutch in a sample of 27 nests was 4.48 eggs, the mode was four, range three to seven. Partial incubation begins before the clutch is complete and full-time incubation begins with the last egg of the clutch. There is some evidence that the male shares incubation duties. Incubation lasts from 29 to 31 days. Only the female has been noted brooding; brooding lasts until the young are about two weeks old. Fledging takes from four to five weeks. The average number of downy young was 2.7 per nest, 2.6 of which were fledged.

Nesting Success:

Fragmentary data is available from some 30 nests; however, complete records concerning nesting success are available for only 10 of these. This data was recorded from repeated visits to eight nests in the Kindersley area and two nests in the Battleford area visited by Sealy and is summarized in Table 3.

Of 45 eggs laid, 27 or 60% hatched. Of the 27 that hatched, 26 or 96% were fledged. Thus the total nesting success was 58%.

Development of Young:

At hatching the young are covered with a sparse white down, except for the protruding abdominal region. The cere and feet are yellow, the eyelids and hooded beak are bluish. The white egg tooth is visible. They are weak and immobile, show only a feeble grasping reflex when moved. The eyes are closed.

At three days of age the eyes are open. At five days the young have been observed to stretch their flipper-like wings above their heads, and back to the edge of the nest to defecate.

At 10 days active yawning and wing-flapping occur. The primary and secondary sheaths are visible.

At 15 days the facial area and much of the remaining body area show feather sheaths or developing feathers. When disturbed the young scream, and active use of the feet when feeding is noted.

At 20 days feathers are evident on all regions. The wings are almost fully developed and the down is almost absent on the breast. Much time is spent in preening. The females may be separated from the males, in most cases, by their larger feet and tarsi and bulkier form.

At 25 days of age the young are fully feathered, but some down is still present. They beg food from their parents, "play" with nest mates, and sleep in adult position.

At 30-35 days of age they leave the nest for the surrounding branches. They can fly from 50-150 yards when disturbed but are not strong enough to return to the trees and the flights are little more than extended glides to the ground. They are dependent, to some extent, on their parents for food for more than a month after they leave the nest.

Mortality of Pigeon Hawks after Fledging:

If one examines a sample of museum specimens, the ratio of subadults to adults decreases from 60% in August to 30-40% in January when molt begins. Over 70% of total returns on Pigeon Hawks banded as nestlings occur within the first year. Nestlings banded in Saskatchewan and Alberta have been recovered within their first year in New Mexico, Kansas, and Arizona, and the Canadian prairies.

Table 3. Reproductive success of Pigeon Hawk

Number of Nests	10
Eggs laid	45
Downy young	27
Fledged young	26
Average number of eggs per nest	4.5
Average number of downy young per nest	2.7
Average number of fledged young per pair	2.6

Sex Ratio:

Observations of 30 nestlings indicate slight excess (52%) of male Pigeon Hawks. Nestlings were sexed on the basis of larger feet and bulkier form of the female, and more rapid development of the males. However, in a random sample of 151 museum specimens 48% were males.

Bathing and Reactions to Water:

No wild Pigeon Hawks have been observed bathing. However they show a preference for breeding areas with permanent water present, and moreover, seem to find such areas attractive at any time of the year. Captive Pigeon Hawks show the same fondness for bathing that is so characteristic of the larger members of the genus.

Flight:

The flight of the Pigeon Hawk is similar to that of other falcons, being swift and direct, with deep, regular wingbeats. Even in normal flight they attain speeds of upwards of 45 miles per hour. Enderson (pers. corr. 1961) followed a wintering female carrying a Horned Lark at this speed for half a mile. In pursuit of quarry the Pigeon Hawk has an ability to twist and turn which probably exceeds that of any other falcon and resembles the similar ability of the accipiters. Like other falcons, the Pigeon Hawk attains its greatest speed when stooping, at which times estimates of 60 to 90 miles per hour would seem to be in order. Pigeon Hawks soar infrequently, but have a curious hovering flight, with wings extended and tail spread, flapping the distal portions of the wing like a kingbird. This flight is characteristic of fledglings and is observed most noticeably in adult Pigeon Hawks when they are circling the intruder at the nest site, and is observed occasionally in hunting Pigeon Hawks.

MIGRATION

The juvenile Pigeon Hawks drift southward in mid-August. The fall movement of migrant Pigeon Hawks on the Saskatchewan prairies seems to to be over by mid-October. Flavin (pers. corr. 1961) observes that the Pigeon Hawk arrives in the Denver area during the last two weeks of October. McCreary (1937) gives the date of autumn migration in Wyoming as being from September 2 through November 27. In spring, according to McCreary, the dates of the greatest movement in Albany County, Wyoming are from March 13 through May 24. Flavin indicates that they have moved out of the Denver area by mid-March.

Specimen records suggest that fewer immatures winter on the prairies than adults. Also, banding recoveries indicate that juvenile Pigeon Hawks tend to migrate farther south than adults. Nestlings banded on the Canadian prairies have been recovered in Kansas, Arizona, and New Mexico.

WINTERING

The largest wintering populations of the western race of the Pigeon Hawk

Photo by R. R. Taylor

Pigeon Hawk with nest and young.

seem to be in Wyoming and Colorado. Enderson (pers. corr. 1961) reports that the preferred habitat in Wyoming is winter wheat stubble. According to Flavin (pers. corr. 1961), in Colorado the Pigeon Hawk is found chiefly on the plains in very open country, and along or near creek beds, where there are stands of cottonwoods and willows. He says there is a marked preference for fence posts and lower perches even when telephone poles are available.

Wintering birds seem to wander at random. However, in certain cases a single bird may stay for some time in a favorable location, for example at grain elevators or farm buildings, probably because of the abundance of small birds attracted by the spilled grain.

FOOD HABITS

Species of suitable size for quarry that are found inhabiting the same areas on the prairies as breeding Pigeon Hawks include Killdeer, Spotted Sandpiper, Eastern Kingbird, Horned Lark, Barn Swallow, Brown Thrasher, Robin, Loggerhead Shrike, Starling, House Sparrow, Western Meadowlark, Brewer's Blackbird, Red-winged Blackbird, Common Grackle, Brown-headed Cowbird, Vesper Sparrow, Song Sparrow, Savannah Sparrow, Baird's Sparrow, and Chestnut-collared Longspur. These species are also found in the parkland areas of the Pigeon Hawk's nesting range along with many other woodland birds such as woodpeckers.

Table 4 summarizes the information available on food at the nest. With one exception, the Baird's Sparrow, all species regularly taken are abundant in the areas frequented by breeding Pigeon Hawks. Horned Larks and the Fringillidae all inhabit open areas, nesting on the outer fringes of cover or on the open prairie. The inexperienced young are very easy prey to the Pigeon Hawks, as are incubating adults. With the exception of kingbirds, shrikes, flickers and other woodpeckers, all species feed on the ground, some with gregarious habits, where they are vulnerable to the swift attacks of Pigeon Hawks. Blackbirds, starlings, meadowlarks, shrikes, and kingbirds all perch in open places where they are conspicuous and can be struck from behind with no warning. If in the open, the slow undulating flight of the flicker and other woodpeckers would also make them vulnerable to attack.

The species listed in Table 5 as prey taken by non-breeding birds seem common in areas where taken and have in common habits which make them vulnerable to attack.

Table 4. Food at the nest

Species	Observer	Per Cent
Horned Lark	Fox*	53.5
Brown-headed Cowbird	Fox	13.3
Vesper Sparrow	Fox	6.7
Song Sparrow	Fox	6.7
Baird's Sparrow	Fox	6.7
Chestnut-collared Longspur	Fox	13.6
Starling	Hampson**	
Red-winged Blackbird	Hampson	
Fringillid Sparrows	Hampson	
Insects: Dragon-flies	Street (1960)	

*From a sample of 16 tarsi removed from one nest at Kindersley, Saskatchewan, and identified by Donald H. Baldwin of the Royal Ontario Museum.

**Remains noted in nests.

Table 5. Food taken by non-breeding birds

Species	Source of Data
Spotted Sandpiper	Fox
Yellow-shafted Flicker	Flavin
Horned Lark	Fox, Enderson, Flavin
Starling	Flavin
Western Meadowlark	Enderson, Flavin
Red-winged Blackbird	Flavin
House Sparrow	Fox, Hampson, Street
Dickcissel	H. G. Deignan (SI)
House Finch	Flavin
Goldfinch	Fisher (1863)
Savannah Sparrow	E. L. Weber (CNHM)
Tree Sparrow	L. L. Snyder (ROM)
Lincoln's Sparrow	Fisher (1863)
Snow Bunting	C. V. Davis (MSC), Houston (1959)
Unidentified Fringillid Sparrows	E. L. Weber (CNHM), Enderson, Fisher (1863)
Insects:	
Beetles	H. G. Deignan (SI)
Grasshoppers and Crickets	H. G. Deignan (SI), Fisher (1863)
Caterpillars	Fisher (1863)

Apparently plucking is done immediately at the site of the kill or at the nearest convenient perch. Hampson (pers. corr. 1961) notes that the prey is almost invariably brought to the nest after plucking and is often decapitated. Skeletal remains found in nests consisted of tarsi, humeri, and sternae, but never skulls.

Webster (letter) reports that in Colorado, wintering Pigeon Hawks fly close to the ground in the manner of the Prairie Falcon, flying at high speeds into flocks of Horned Larks. He reports that on this type of attack they seldom make a second attempt at any individual in the flock should they miss.

Predatory Behaviour of Captive Birds:

Frank Beebe (pers. corr. 1961) carefully described the habits of his trained female as follows:

"During its first season this merlin was flown with some success as a hunting falcon, flying directly from the fist. Flights were had on the following species: meadowlark, European skylark, house sparrow, Brewer's blackbird, robin, goldfinch, killdeer, mourning dove, California quail, and band-tailed pigeons. The highest number of flights were on house sparrows, meadowlark, goldfinch and killdeer. Successes were obtained on goldfinch, meadowlark, robin, house sparrow and only one killdeer, it not yet fully grown. Successful flights were invariably started by the merlin seeing the quarry walking on the ground. Intention of attack was indicated by head-bobbing, the attack was absolutely direct with no attempt at concealment, which almost always resulted in the quarry flushing when the merlin was some considerable distance away, and most catches were aerial strikes. The first strike on such an attack was made from directly behind in the manner of an accipiter, but subsequent tries were made as a series of short twisting stoops from above, the falcon shooting up after each attack, climbing for a few wingbeats, then twisting into another stoop. Flights were terminated by the quarry being hit and knocked down, snatched in the air, or forced out of the air and taken on the ground; or by the quarry dodging several attacks and climbing above the merlin (skylark and killdeer) or by diving into cover (meadowlark and house sparrow). Some birds regularly flew straight away and outdistanced the merlin. Mourning dove and band-tailed pigeon did this, so also, with amazing regularity, did robins. Highest successes were scored on meadowlark and goldfinch. Meadowlark were often cut out of the air in the classic method by the first strike. Goldfinches, feeding on thistle or in fields often remained oblivious to the approaching merlin until it was very close and travelling very fast; sometimes they failed to flush at all and were snatched from their perch. Goldfinches were always carried to a tree and eaten there.

"During the second season, when it was at full liberty much of the time, many flights were observed. Quarries were much the same, the bird showing a marked preference for house sparrows and goldfinch over other quarries. Except that the attack was launched from tree-top height, with consequent higher advantage and speed, there was no difference. The merlin seemed to interpret opportunity in terms of the distance a prospective quarry was from the cover, and would bide its time, especially with house sparrows, waiting for them to get well in the clear before launching an attack. It almost wiped out a little flock of fifty-odd house sparrows during the three months of June, July, and August, despite an infestation with parasites in June."

Other falconers report Pigeon Hawks taking Mourning Dove, Horned Lark, flicker, and Starlings. An adult female took as its first quarry a Gray Partridge, according to Morlan W. Nelson (pers. corr. 1961). However, she could not hold it long enough to kill it.

ACKNOWLEDGMENTS

Responses to letters of enquiry which were used in this paper were received from Frank L. Beebe, Dr. James H. Enderson, John W. Flavin, Jr., Harold M. Webster, Morlan W. Nelson, Richard W. Fyfe, Cyril Hampson, Spencer G. Sealy, and Maurice G. Street. Their contributions are greatly appreciated.

The Saskatchewan Museum of Natural History made available the files of the Prairie Nest Records Scheme of the Saskatchewan Natural History Society. Donald H. Baldwin of the Royal Ontario Museum identified portions of several prey species. Allen J. Duvall of the U.S. Fish and Wildlife Service made available the banding records in his keeping.

Information concerning specimens was supplied by personnel of the Saskatchewan Museum of Natural History, the Royal Ontario Museum (ROM), the National Museum of Canada (NMC), the Smithsonian Institution (SI), the University of Michigan Museum of Zoology, the University of California Museum of Vertebrate Zoology, the University of Kansas, the University of Wyoming, Montana State College (MSC), North Dakota State University, the University of Oklahoma, the Denver Museum of Natural History, and the Chicago Natural History Museum (CNHM).

Finally, I wish to thank Dr. James H. Enderson, Frank L. Beebe, and Dr. Robert W. Nero for their constant encouragement, constructive criticism, and editorial assistance throughout this study.

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MARSH HAWK ATTEMPTS TO SALVAGE A DEAD COOT

by **John B. Millar,**
Canadian Wildlife Service, Saskatoon

On September 30, 1963, while making a waterfowl count at a slough southeast of Swift Current, Saskatchewan, I noted a Marsh Hawk *(Circus hudsonius)*, likely an adult female, judging from its dark color, cruising low along the shore. A number of dead ducks and coots were floating on the slough, apparently having been shot. The hawk flew to the carcass of an American Coot *(Fulica americana)* which was floating on a matted bed of spikerush *(Eleocharis palustris)* and began repeated but unsuccessful attempts to drag the bird to shore. On each attempt it gripped some part of the carcass (either the head, trunk, or wing) with its feet and lunged upward repeatedly in an effort to become airborne. After several such efforts it would settle back on the coot to rest, occasionally picking at it but making no serious attempt to feed. Under the weight of the hawk the coot would gradually sink through the vegetation until the hawk, on extended legs, was often breast deep in water. At this point it would take a fresh grip and resume its efforts to get the carcass airborne.

The entire procedure was repeated several times within a period of 12 minutes, and during that time the hawk succeeded in moving the coot about three feet toward shore. At this point the carcass slipped from the hawk's grasp, whereupon the bird arose and dipped to water level two or three times without apparently touching the coot. The hawk then flew to the shore where it rested for perhaps two minutes before returning to try once more to lift the coot. After this it returned to the shore, came out a third time but made only a half-hearted attempt, then cruised about for a minute or so and returned to touch the water briefly at the approximate location of the dead bird before departing.

After the Marsh Hawk's departure I attempted unsuccessfully to find the coot. The nature of the disappearance of the coot and the final behaviour of the hawk suggests that the bird had succeeded in moving the carcass to the edge of the spikerush bed where it was no longer supported by the vegetation and simply sank to the bottom of the pond.

Considering that an adult coot may range in weight from 533 to 829 grams (Gullion, G. W. 1952. Sex and age determination in the American Coot. J. Wildl. Mgmt. 16:191-197) and that the average weight of a female Marsh Hawk is in the order of 570 grams, it is evident that the hawk was struggling' with a dead weight approximately equal to its own. A further example of this sort of behaviour is given by M. C. Hammond (1948. Marsh Hawk kills Baldpate. Auk., 65:297-298), who describes the unsuccessful efforts of a Marsh Hawk to drag a 1,003-gram American Widgeon *(Mareca americana)*, which it had killed, to shore.

REGARDING WINTER RECORDS OF THE SNOWY OWL

by **Bernard Haysom,** Regina

For some time now I have been trying to determine the winter range of the Snowy Owl in Saskatchewan. The excellent response to my requests in the *Blue Jay* for records has given me much to work on. Generally, the Snowy Owl appears to occur as a winter visitor throughout the province, but it is most common in the southern third of the province. However, in the area bounded on the north by highways No. 1 and No. 16, on the west by No. 4, and on the east and south by the borders, the Snowy Owl has been reported at only five points (Oxbow, Carnduff, Francis, Gravelbourg, and Kincaid). In the north, sightings generally cease at a line through Nipawin, Prince Albert, and North Battleford, but we do have reports from Paddockwood, Birch Lake, Eldorado, Reindeer Lake, and Pelican Narrows. These records suggest that Snowies also occur in winter across the boreal forest region.

I would like to make a special request for sightings in the two areas in which there are few records, namely, the northern two-thirds of the province, and the extreme southern region, from south of Swift Current and Regina to Estevan. Of course, reports of sightings in any area would be welcome. Please send records to me at 15 Crerar Street, Regina.

BALD EAGLE RECORDS FROM THE CHURCHILL RIVER AREA

by **Peter Whitehead,**
Historic Trails Canoe Club, Regina

During our annual club trip for 1964 we sighted a total of 20 Bald Eagles. Leaving Nemeiben Lake (NW of La Ronge) on June 27, our route took us through Head, Clam, Morning, Gull, Besnard, Black Bear Island, Trout, and Nipeu lakes to Missinipi and Otter lakes. We completed the trip on July 4, having covered a distance of 104 miles. The eagles were widely distributed. Single sightings were made on Clam, Triveet, Gull, and Stack lakes. On Trout, Mountney, and Nipeu we sighted two on each lake. On Black Bear Island lake we saw four, and on Besnard Lake six. A single nest was sighted at the tip of a spruce on the shore above muskeg between Triveet and Morning lakes. With one exception (an immature bird) the eagles were very shy, flying away when we approached to within 300 yards. The quiet waters immediately above and below rapids appeared to be their preferred habitat. This was also noticed on our previous trips. Incidentally, our sightings of eagles have all been casual. No attempt was made to locate birds or nests using binoculars en route.

LATE NESTING OF A GRAY PARTRIDGE

by **Victor Schmidt,** Melville

On September 21, 1962, I was surprised to come across a female Gray Partridge *(Perdix perdix)* with a brood of eight downy chicks, not more than three days old, in a stubble field six miles south of Melville. I took one of the young and have it mounted in my collection of local birds. I wish to thank Gary Anweiler for pointing out to me the very late date of this event, which must be one of the latest nestings on record for this species, and for urging me to record the data.

NEST RECORDS DESIRED

Now that the 1964 bird nesting season is past we would like to receive your Prairie Nest Records Scheme cards as soon as possible. Please send to: Prairie Nest Records Scheme c/o Robert R. Taylor, University of Saskatchewan, Regina Campus, Regina, Sask.

Photo from color transparency by Pat Kerr.

Newly-hatched Bald Eagle, Johnston Island, Lake Athabasca, June 30, 1961.

Nesting of the Mockingbird at Cadogan, Alberta

by **H. W. Burns,** Leduc, Alberta

On July 12, 1964, Mr. Denis Galloway, of Czar, informed me that a Mockingbird had been reported on the Mr. F. Speight farm, near Cadogan, a small town west of Macklin, Saskatchewan, and we went immediately to investigate. Mr. and Mrs. Speight believed that they had discovered a Mockingbird because it sang most of the night and imitated other birds. Mr. Galloway and I located the nest upon our arrival about 75 yards from the house and 13 feet above the ground in a pine tree in a shelterbelt surrounding the farm buildings. The nest contained five eggs and, as the Speights were not at home, we left a note requesting that they let us know when the eggs were hatched.

On July 18, Mrs. Speight, who has a keen interest in natural history, reported that the eggs had hatched. With two Alberta naturalists, Mr. E. T. Jones and Mr. C. Hampson, I visited the farm on July 21 in order to photograph the birds in their nest. We found the Speights at home, and they stated that they had first noticed the male Mockingbird singing on June 10. They reported that when the yard light was switched on at night the bird would begin to sing. This would go on all night at times. They were sure that both the male and female were there on June 12, since on that date they had heard at times an answering call when the male stopped singing. Because the Speights were busy at the time they had not been able to notice any nest building.

The nest was composed of dry pine twigs and was lined with rootlets, binder twine, and pasture sage. It contained five young which were fed by the female at 15 minute intervals. She would also brood or shade them for approximately five minutes at each visit (it was a hot day). The principal food appeared to be grasshoppers and smaller insects. We kept the nest under observation for about seven hours, and during this time the male visited the nest with food only once.

Mr. Jones left bands with Mrs. Speight, and asked her to band the young when they were old enough. On August 2 Mrs. Speight reported that this had been done and that the young had left the nest. At the time of writing the young were still present in the shelterbelt.

Mr. Frank Brazier deserves thanks for encouraging me to prepare this report.

Photo from color transparency by H. W. Burns

Location of Mockingbird nest in pine (below arrow) near Cadogan, 1964.

Photo from color transparency by H. W. Burns

Mockingbird at nest, Cadogan, 1964.

Additional Records of the Mockingbird

by **Frank H. Brazier,** Regina

My study "Status of the Mockingbird in the Northern Great Plains" *(The Blue Jay,* 22:63-75, June, 1964) evoked welcome comment from Harold Hosford, of the Natural History Society of Manitoba, and Ron Huber, of Minneapolis, Minnesota. Mr. Hosford deplored the scanty Manitoba records, particularly as lack of them had led me to report erroneously (p. 68) that the Prince Albert record was the species' farthest north report. He had gone through "Chickadee Notes" (a column in *The Winnipeg Free Press,* by the late Mr. A. G. Lawrence, and subsequently by Harold Mossop) for many records I did not have. Mr. Lawrence had noted that in Manitoba quite a flurry of records had occurred in the late 1920's but no nest was found and the invasion petered out. A similar situation prevailed in the entire region as the records shown in Table 2 of my previous report reveal.

Ron Huber obligingly culled Mockingbird records from *The Flicker* (now *The Loon)* for additional records to bring those for the easternmost part of the Northern Great Plains up to date. I wish to record my indebtedness to both these SNHS members.

I have not included a recent Alberta breeding record in this article as it appears elsewhere in this issue.

ADDITIONAL RECORDS

1922. 1 seen at KENTON, Man., by Dr. J. E. Tisdale, Manitoba's first record. (Chickadee Notes #1755, Jan. 8, 1955, cited by H. Hosford).

1950. 1 seen at STEEPROCK, Man., May 28, by A. Isfeld of Benito, Man. (Chickadee Notes #1515, June 3, 1950, cited by H. Hosford). Note: Steeprock River is said to be 70 miles north of Swan River, Man., but this is evidently a misprint as Steeprock Creek on current maps is 40 miles north of Swan River.

1954. 1 seen at WINNIPEG, Man., by A. G. Lawrence at local feeding station Dec.-Jan. 3, 1955. (Chickadee Notes #1755, Jan. 8, 1955, cited by H. Hosford).

1955. 1 seen at CHURCHILL, Man., May 31, by Mrs. A. Beckett (continent's farthest north record). (Chickadee Notes #23, June 17, 1955, cited by H. Hosford).

1955. 1 seen in WINNIPEG, Man., Oct. 23-25, by A. W. Sellers, feeding on crabapples. (Chickadee Notes #42, cited by H. Hosford).

1960. 1 seen on Apr. 23 in CARLOS AVERY REFUGE, Anoka Co., Minn., by D. Pearson.

1960. 1 seen in HENNEPIN CO., Minn., May 1, by Mrs. A. C. MacInnes; 1 seen same area, May 2, by Mrs. Donald Barr; 1 seen same area, May 3, by R. B. Janssen (possibly same bird); 1 seen SCOTT CO., Minn., May 6, by Sophia Harms; 1 seen RICE CO., Minn., May 10-13, by Mrs. R. A. Houston. *(The Flicker,* Sept., 1960, cited by R. Huber).

1960. 1 seen May 27 south side of WINNIPEG, Man., flycatching, by H. Hosford. (Pers. corr. H. Hosford).

1960. 1 seen in RAMSEY CO., Minn., July 1, by Mrs. R. Leach. *(The Flicker,* Sept. 1960, cited by R. Huber).

1960. 1 remained at feeder of Dr. W. J. Jeffries, HOPKINS, Minn., from early Nov. to March 1, 1961. *(The Flicker,* June, 1961, cited by R. Huber).

1961. 1 seen by V. Heig, May 3, at ST. PAUL, Minn., remained a week. *(The Flicker,* June, 1962, cited by Huber).

1962. 1 seen at ROSEMOUNT, Minn., May 19, by R. Glassel. *(The Flicker,* June, 1962, cited by R. Huber).

1962. 1 adult banded May 24 at ST. PAUL, Minn., by Mrs. R. Leach. *(The Flicker,* Sept., 1962, cited by R. Huber).

1963. 1 seen at TWO HARBORS, Minn., May 11-23, by Ruth Kuchta. *(The Flicker,* June, 1963, cited by R. Huber).

1963. 1 seen at WEST NEWTON, Minn., May 15, by Grace Gordon. *(The Flicker,* June, 1963, cited by R. Huber).

1963. 1 seen at NIOBRARA REFUGE, Nebr., about May 20, by Dr. A. E. Allin. *(The Flicker,* June, 1963, cited by R. Huber).

1963. 1 seen at ST. PAUL, Minn., Nov. 7, by Mrs. R. Leach. *(The Flicker,* Dec., 1963, cited by R. Huber).

1964. 1 seen at ANOKA, Minn., April 19, by R. Huber. *(The Loon,* June, 1964, cited by R. Huber).

1964. 1 seen at DULUTH, Minn., May 9-10, by Janet C. Green. *(The Loon,* June, 1964, cited by R. Huber).

1964. I seen at WINNIPEG, Man., May 27-June 4, by David Hatch, Harold Hosford *et al* (Pers. corr. H. Hosford).

ADDITIONAL FALL RECORDS OF THE YELLOW RAIL

by **Gary Anweiler,** Melville

On October 5, 1964, while I was hunting snipe with Dr. R. W. Nero in a grassy spring-fed bog in the Qu'Appelle Valley 10 miles west of Lumsden, Dr. Nero's dog flushed a Yellow Rail *(Coturnicops noveboracensis)* which I collected. It proved to be an adult female and has been prepared as a specimen for the collections of the University of Saskatchewan, Regina Campus. Common Snipe were abundant in the bog; at least 50 were present. A few Soras were also flushed.

There are two other local fall specimens for the Yellow Rail. Both were TV tower casualties, and therefore probably migrants, found by Fred W. Lahrman. One, found at Regina on October 7, 1962 *(Blue Jay,* 20:152) was a female, and the specimen appears to be in adult plumage. This record was discussed, together with a brief summary of the status of this species in Saskatchewan, by Margaret Belcher *(Blue Jay,* 20:153). A second Yellow Rail, found at Lumsden on August 21, 1964, was also a female; judging by its plumage it is an immature bird.

CHRISTMAS BIRD COUNT DATES

Tuesday, December 22, 1964
through
Sunday, January 3, 1965

List the numbers of each species seen on the ONE BEST DAY. In addition, list any other species seen during the count period, giving number of individuals and dates seen.

Send reports as soon as possible after January 3 to **Mrs. Stuart Houston, 863 University Drive, Saskatoon.**

Varied Thrush at Regina

by **Margaret Belcher,** Regina

The Varied Thrush *(Ixoreus naevius)* appears as a hypothetical species for Saskatchewan in the fourth edition of the *Field Check-List of Saskatchewan Birds* (1959). The species is further treated as hypothetical in the *Birds of Regina* (1961) where I reported an observation of a single bird which was clearly, but only briefly, seen and which I could not locate again for other observers to check. Additions to the check-list of Saskatchewan birds (Nero and Houston, 1963) do not include the Varied Thrush.

The Varied Thrush has only rarely been reported in Saskatchewan. The *Blue Jay* (7(4):13) tells of one banded at Burnham, September 27, 1949, by Arthur Ward. The first Regina record I have is the one reported in the *Birds of Regina*—one with an indistinct breast band, presumably an immature bird, seen in Regina on September 9, 1958. This bird was seen in the high branch of a deciduous tree, and observed well for a few minutes before it flew. I described it at the time in my notes as having a "tawny breast (almost scaly in appearance—but not streaked or spotted), wings with tawny marks or bars. Most conspicuous was a *light* stripe over eye and continuing down head to nape, otherwise top of head was olive (stripe as conspicuous as that of waterthrush). Bill long, not very heavy." At the same time I sketched a picture of the head, showing the characteristic stripe.

Since the publication of this record, two further Regina observations have been reported to me. On September 30, 1961, one was seen in a hedge by Elsie Cheeseman, and the orange eye-stripe and black bar against the reddish chest were noted as reported to Herb and Ruth Tempel; on May 22, 1962, Herb Tempel saw one in shrubbery in the Legislative Grounds.

Finally, an altogether excellent view of a Varied Thrush rewarded the end-of-the-season enthusiasm of a small party of Regina bird watchers on October 24, 1964. We were driving past the wooded lawns of the Legislative Grounds in mid-afternoon (about 3:30 p.m. CST) when a bird on the ground, moving about like a Robin, caught my attention because its breast was marked quite unlike a Robin's. The dark necklace across the coloured breast and the stripe over the eye were the first and most conspicuous features noted as I flung the car door open and jumped out, calling upon the others—Lucy Murray, Christine MacDonald and Charlotte Boissonnault—to come and look at the bird with me. Look hard, I said, it's a Varied Thrush!

With binoculars we were able to watch the bird for some minutes and at close range, as it moved first toward us and then deliberately across the lawn down to the water's edge. We carefully established the following features—bright tawny throat, breast, eye stripe and wing markings, with a slate-gray necklace (not *black)* scooped across its neck, the colour of the necklace blending with the dark gray back. The bird had light-coloured legs, and in addition to the tawny bars on its wings some flecks of white which seemed to edge feathers of the wingtips or tail. We did not see the bird in flight at close enough range to note the details of this pattern. After this detailed observation, Miss Murray went back to the car to get Peterson's *Field guide to the western birds,* and we could see our birds faithfully pictured there. There could be absolutely no doubt that the bird we were observing so clearly at a distance of no more than 20 yards was a Varied Thrush.

Seeing the bird in Regina prompted me to recall that the last time I had seen a Varied Thrush was on May 31, 1962, in Yellowstone National Park when on a plant collecting trip with Maureen Rever. I referred casually to the Varied Thrush seen on Mt. Washburn in an article for the *Blue Jay* (20:149), but did not realize then or subsequently that this species is described by the A.O.U. Check-list (1957) as "accidental" in Wyoming (Yellowstone National Park). Having seen the Varied Thrush in similar country at Banff (summer, 1954), it did not strike me as unusual to find one on our tramp along a road up Mt. Washburn.

The A.O.U. Check-list defines the status of the Varied Thrush as "casual" in southern Alberta (Belvedere, Edburg, Sullivan Lake, Rosebud) and central Montana (Missoula, Bozeman, Fort Custer). Salt and Wilk (1958) describe it as breeding in Alberta in the Rocky Mountains from the international boundary to north of Jasper, appearing on the prairies "only as an accidental straggler well off its usual migration route." It is noted that in fall it may not leave the Banff area until early October, and that it is during migration periods that Varied Thrushes are occasionally seen east of their usual mountain haunts. Bent (1949) gives some late dates of fall departure that compare interestingly with our recent Regina record: "Alberta—Edberg, October 10. Montana—Fortine, October 24. Idaho—Priest River, November 8."

The Varied Thrush migration is a matter of a downward, as well as a southward, movement—which further complicates the pattern. It moves for the winter from the mountains to the lower valleys. Its appearance in Regina reminds one of the Townsend's Solitaire, another species which appears in migration far east of its breeding range in the mountain forests, and for which there are a number of Regina records.

Bent refers to migrant Varied Thrushes found east of their normal range being "usually in company with robins"; we noted on the afternoon on which we saw the thrush a little flock of Robins in the Legislative Grounds where the local robins had been conspicuously scarce for some days.

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NORTHERN RECORDS FOR CINNAMON TEAL

by **Herb C. Moulding,** Regina

On Saturday morning, June 6th, accompanied by Bill Hooey and Tom Sterling of Ducks Unlimited, we were inspecting Scentgrass Lake north of Battleford. As we were driving along the road at the west end of the lake, having just crossed the outlet, we observed a male Cinnamon Teal in the road ditch. This same teal was in the same location when we returned from inspecting the lake (which incidentally harbored approximately 1,200 Canvasback, mostly drakes, at the east end of the marsh). The teal was reluctant to fly which would indicate that there could have been a pair in the vicinity.

It is only periodically that Cinnamon Teal are observed in Saskatchewan. How far north these birds have been observed is not known, but the above report is being submitted to verify the fact that they were observed fifteen miles north of Battleford in June, 1964.

A TREE-PERCHING SORA

by **John B. Millar,**
Canadian Wildlife Service, Saskatoon

On June 4, 1963, I flushed an adult Sora *(Porzana carolina)* from a small slough near Swift Current, Saskatchewan. Instead of dropping back into the vegetation in the usual fashion after a short flight, it flew perhaps a hundred feet and landed five feet up in an isolated eight-foot willow tree *(Salix* sp.) at the water's edge. When I attempted to flush it from the tree the Sora merely hopped from branch to branch to the far side. As I moved around toward the bird it worked its way back through the branches to its former position. This procedure was repeated five or six times before the bird finally left the willow and flew back across the slough. This Sora's behaviour was particularly interesting in that it appeared to be quite at ease among the branches and moved about in the manner of a small fringillid.

Baird, Brewer and Ridgway (In Bent, Life Histories of North American

Marsh Birds, 1926, p. 311) have previously reported the perching of a Sora on a tree limb and consider this behaviour to be most unusual for this species.

Ed. Note: See also the report by T. E. Randall (**Blue Jay,** 20:116) of a Sora **nest** in a willow bush.

QUERY RE: RECORD OF WESTERN TANAGERS AT LITTLE MANITOU LAKE, AUGUST 14, 1963

The Editors are grateful to vigilant *Blue Jay* readers who read published records carefully and help to evaluate them in the light of their personal experience. We thank Mr. R. D. Symons, with his long association with Saskatchewan birds, for asking us to review the record of a flock of Western Tanagers at Little Manitou Lake, August 15, 1964, which we printed in a recent issue of the *Blue Jay* (22:53, June, 1964). Mr. Symons feels that these birds might have been Red Crossbills, and offers the following reasons:

"1. Between August 5 and September 1, 1963, we had a flock of five Red Crossbills on the lakeshore at Silton. They fed in poplars in exactly the same way and *on the same beetles*. They also visited our sunflowers at the end of August.

"2. Red Crossbills are in the habit of occurring in flock of from a few individuals to several family groups at almost any season of the year, and in the most unexpected places. For example, from my records: "In poplars at Cut Knife, Sask., August, 1933 (White-winged Crossbills)"; "in poplars at Wood Creek, Renown, July, 1924 (Red Crossbills)". Now, Renown, Watrous (Little Manitou Lake) and Silton are in the same general area, and exactly similar habitat.

"3. The difference in size between the species is not really noticeable without some basis for comparison.

"4. The difference in bill, except at a few yards, is not easy to see. At 20 feet with field glasses, and at six feet without, my wife had difficulty in seeing the crossed bill. Her eyes are not trained, it is true; but she looks at birds a lot.

"5. In coloration (except at height of breeding season) the differences, again, are not great. The general greenish to yellowish plumage of the females is somewhat similar. Either species might show, in adult males, more or less red at that time of year. There is the matter of wing bars. These might or might not be quite noticeable. They occur on the Tanager, but not on the Red Crossbill, and are fairly plain on the White-winged Crossbill (see the above occurrence at Cut Knife).

"6. *General habits*. Generally speaking, both species feed quite silently. In spring the male tanager, of course, utters his simple chirruped song. Both species are fairly sluggish in movements.

"7. I have been fairly familiar with the Western Tanager in the Peace River parkland and east to Meadow Lake. Taverner's description of (all but spring male) Western Tanager as "a dull, greenish, sparrow-like bird" is good, but could also be applied to (all but a spring male) either of the crossbills.

"8. I know the Watrous area to be within the normal (if not regular) range of the crossbill. I think it is rather far out for Tanagers, and I have never personally seen tanagers in such a "flock" as described.

"9. *Habitat*. I would not expect to see tanagers in such meagre woodland as at Little Manitou. I have always found them in heavy poplar or mixed woods with trees averaging at least 60-75 feet in height."

Reviewing the note on Western Tanagers at Little Manitou Lake gives the Editors an opportunity to make another comment. The article called attention to the range of dates for previous documented records of the Western Tanager in southern Saskatchewan as extending from May 13 to May 28. A recently published record of a spring male at Tullis on May 22, 1940, also falls within these dates (see J. Frank Roy, *An Introduction to the birds of the Elbow*, Regina, Saskatchewan Natural History Society, 1964).

Co-operative Spring Migration Study, 1964

Compiled by
MARGARET BELCHER
Regina

	DILKE J. Boswell Belcher	INDIAN HEAD Mr. and Mrs. F. Skinner	ISLAND FALLS Gordon Dash	KELVINGTON Steve Waycheshen	PRINCE ALBERT Tony Capusten	REGINA R.N.H.S.	SASKATOON	SHEHO Wm. Niven	SOVEREIGN Mrs. G. Winny	SPIRIT LAKE Wm. Anaka	TRAYNOR J. W. Inglis	YELLOW CREEK Bohdan Pylypec
Whistling Swan	Ap14	Ap16				Ap 5	Ap12	Ap19	Ap22	Ap24	Ap26	
Canada Goose	Ap15	Ap11		Ap12		Ap 3	Ap 4	Ap 1	Ap 6	Ap 2		Ap13
Mallard	Ap18	Mr28	My 9	Ap23	Ap18	Ap 3	Ap10	Ap10	Ap 1	Ap12	Ap 6	Ap10
Pintail	Ap 2	Mr29	Ap30	Ap10		Ap 1	Ap10	Ap10		Ap10	Ap 4	Ap10
Marsh Hawk	Ap 6	Mr26		Ap23	Ap18	Ap 3	Mr30	Ap 2	Ap 1	Ap 5	Ap 7	Ap 5
Killdeer	Ap15	Ap 4	My 7	Ap14	Ap18	Ap 1	Mr31	Ap17	Ap 6	Ap15	Ap14	Ap19
Common Snipe				Ap24		Ap18	Ap24	Ap23		Ap25	My 2	Ap27
Mourning Dove	My10	Ap13			Ap26	Ap11	Ap21	Ap17	My20	Ap15	My 2	Ap26
Common Nighthawk	My10	My22		Jn 4	My24	My13	My21	My27		My25		My27
Ruby-throated Hummingbird		My21		My20		My27		My19		My22		My27
Yellow-shafted Flicker	Ap19	Ap16	Ap29	Ap21		Ap16	Ap11	Ap21	Ap20	Ap19	Ap24	Ap23
Eastern Kingbird	My18	My31		My22		My10	My16	My17	My20	My17	My16	My13
Great-crested Flycatcher				My23						My24		

Eastern Phoebe		My14	Ap27	My11	Ap25	Ap30	Ap25	Ap24		Ap20		Ap27
Barn Swallow	My 4	My 1	My17	My14		Ap25	My 8	Ap28	My13	My 4	My 6	Ap30
Purple Martin				Ap19		Ap23		My11				Ap30
Common Crow	Mr18	Mr14	Mr26	Ap 3	Ap 4	Ap 4	Mr29	Mr31	Mr30	Mr27	Mr21	Ap 2
House Wren	My18	My16		My 9	My14	My 4	My 9	My 8		My10	Jn 2	My 9
Catbird		My17		My28	My27	My17	My23	My20	My28	My18	My30	My28
Brown Thrasher	My17	My 5				My 4	My 9	My 8	My 7	My16	My22	My13
Red-eyed Vireo				Jn 5		My28	My24	My16		My17		My30
Black-and-white Warbler						My 3			My 7			My24
Tennessee Warbler					My24	My 6	My 9	My16		My15		My10
Yellow Warbler	My17		My18	My15	My17	My 4	My 9	My15	My24	My15	My21	My 9
Myrtle Warbler		My 4	My 9	Ap20		Ap18	Ap19	Ap27	Ap24	Ap17	My 3	Ap24
Blackpoll Warbler						Ap24	My23					My10
Ovenbird				My13	My18	My 6	My 4			My12		
American Redstart		My27		My25		My16	My23					
Bobolink		My13						Jn 5				
Red-winged Blackbird	Ap18	Ap12	My11	Ap12		Ap 3	Ap19	Ap15	Ap25	Ap15	Ap20	Ap24
Baltimore Oriole	My17	My17		My15	My19	My11	My16	My16	My16	My16	My20	My17
Scarlet Tanager						My 6						
Rose-breasted Grosbeak		My28		My17	My 9	My16	My23	My17		My17		
American Goldfinch		My 4		My24	My24	My16	My23	My21	My25	My22	My29	My18
Slate-colored Junco		Ap 6	Ap18	Ap 5	Ap11	Ap 2	Ap 4	Ap 4	Ap 2	Ap 4	Ap 7	Ap 7
Chipping Sparrow	My 8		Ap25		My 9	Ap26	My12	My17	Ap25		My 4	
White-crowned Sparrow	My 6	My 4	My10			Ap16	Ap26	My 5	Ap26		Ap30	My 6
White-throated Sparrow	My 4	My10		Ap28	My 2	Ap17	Ap26	Ap26	Ap24	Ap24	My 5	Ap27

Woolly Yarrow on the Dry Prairie

by **K. F. Best,** Swift Current

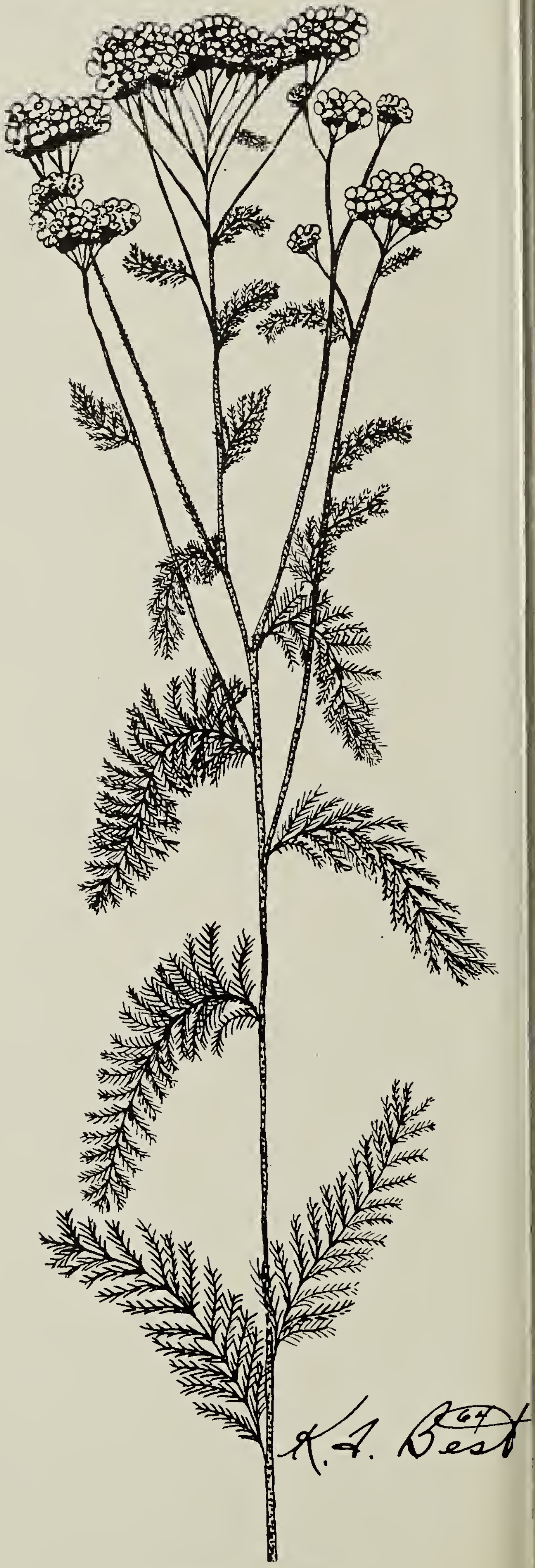
Woolly yarrow, *Achillea lanulosa* Nutt., often called western yarrow, milfoil or wild-tansy, is a member of the composite family. The generic name *Achillea* is in honor of the legendary Greek hero Achilles, who is credited with first using yarrow to cure wounds. The specific name *lanulosa* is from the Latin *lana* meaning wool, and refers to the fine, dense, silky-woolly hairs which cover the plant and give it a somewhat greyish appearance.

Woolly yarrow, a common plant of the dry prairie, has extensive rhizomes. The stems are densely white-woolly, somewhat grooved, erect, and up to two feet in height. Leaves are mostly basal, narrowly lance-shaped in outline and from two to eight inches in length. Much divided and sub-divided into very fine segments, the leaves become increasing shorter up the stem and are either stalkless or nearly so.

The dense flower clusters at the ends of the stems are somewhat flattened or convex like the top of a derby hat. The individual flowers are about ¼ inch wide, the outside or ray florets being petal-like and white or rarely pink. The centre or disk florets are small, numerous, yellow in color.

Owing to its extensive underground organs, yarrow is a soil binding species important in soil erosion control. When such plants are started near the edges of small gullies, their rhizomes soon spread in all directions and serve to check surface run-off. In addition to this vegetative propogation by rhizomes, yarrow, having a long flowering period, is also a strong seed producer.

Yarrow is found in a great variety of habitats, although it generally avoids dense shade. It is a comparatively drought-resistant, and flourishes in the sandy and gravelly soils of the dry prairie. Plants seldom form pure stands on areas larger than a few square feet. In natural, undisturbed areas, yarrow occurs only sparsely, but it increases rapidly under overgrazing. Sheep, and sometimes cattle, seems to relish the flower heads; although they do not eat the stems when they become woody later in the season, they occasionally graze the dried leaves.



Woolly Yarrow

Striped Coral-Root

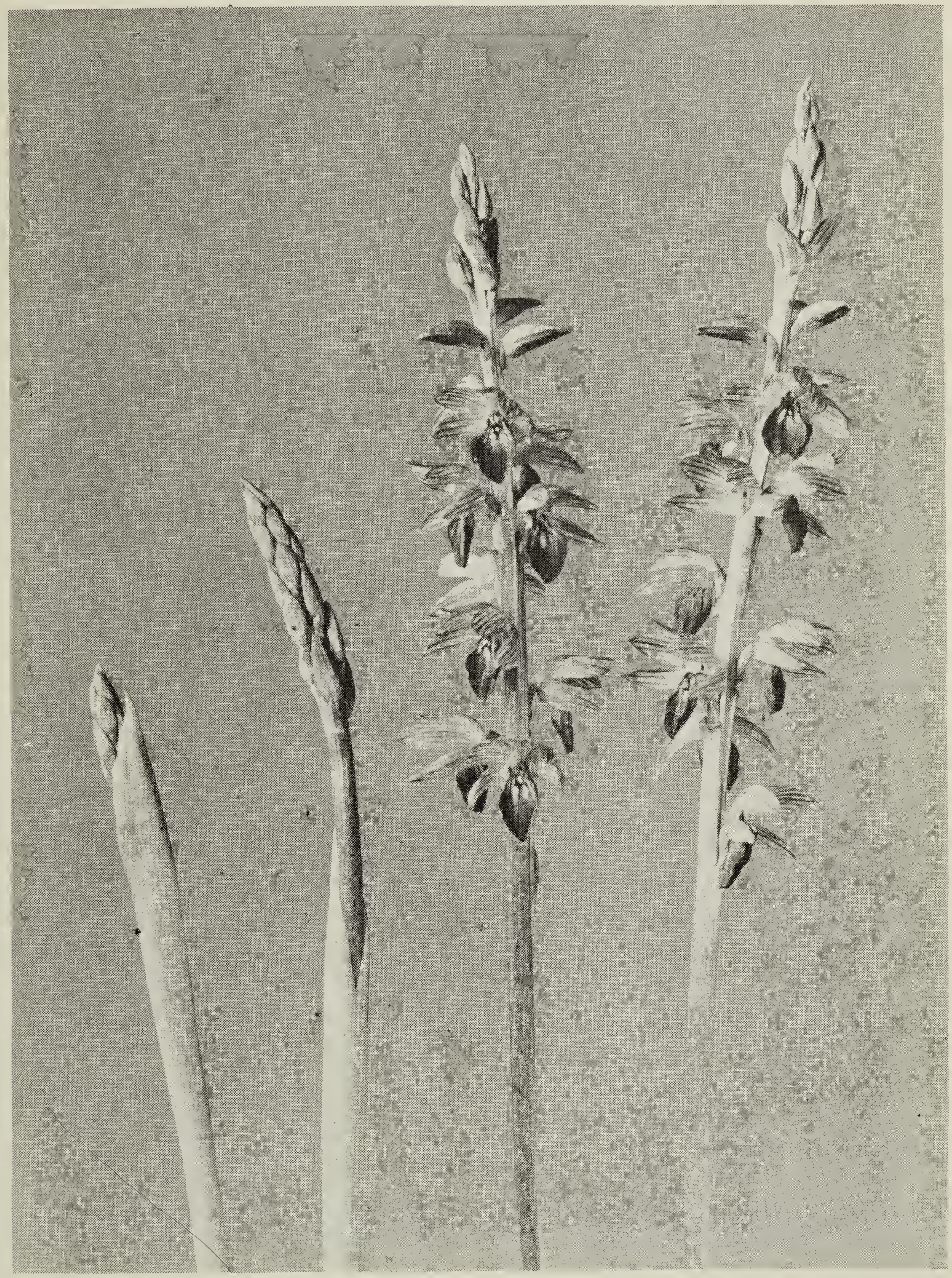


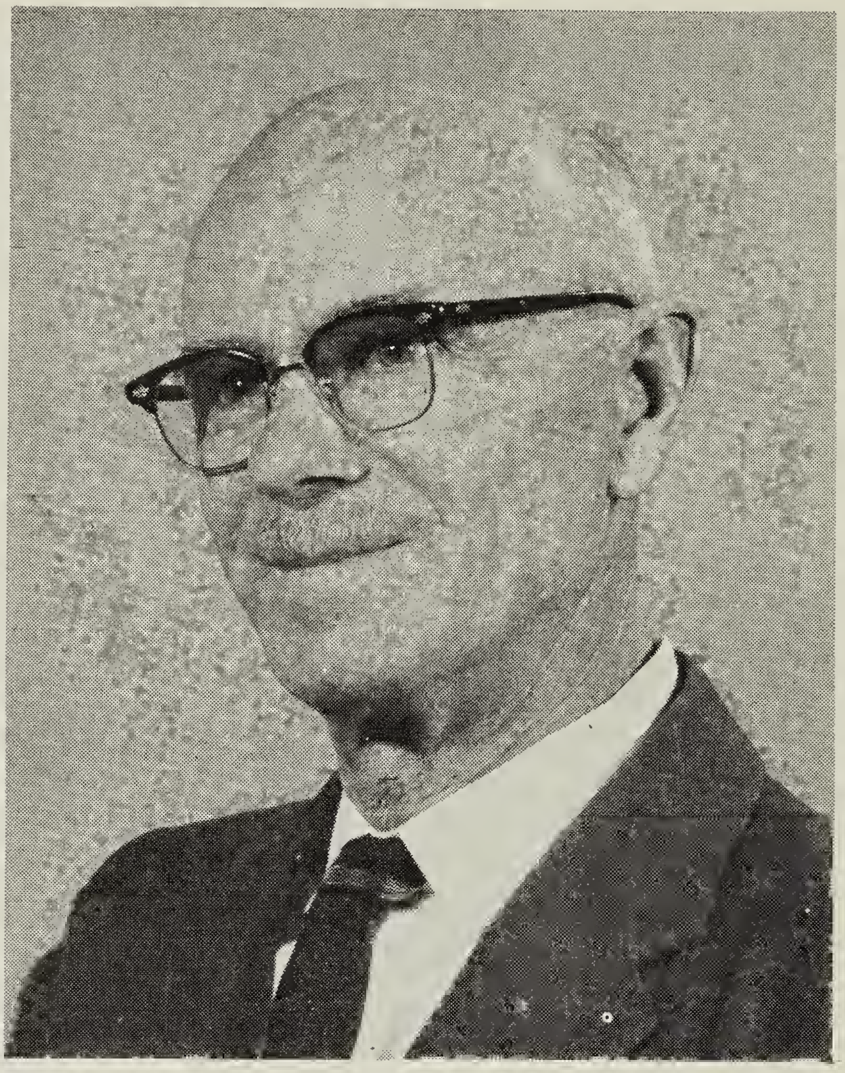
Photo by the late Dr. W. C. McCalla

Corallorhiza striata Lindl.

The Coral-roots are saprophytic orchids which do not have green leaves. They can not manufacture their food but obtain it from organic matter in the soil. They have thick coral-like rhizomes. The Striped Coral-root, found in rich woods of all three prairie provinces, is usually purplish with darker purple stripes on the sepals and petals.

Ralph C. Russell, 1896-1964

by **J. L. Parker,** Gilbert Plains, Manitoba



Dr. R. C. Russell was born at Charing Cross, Ontario, in 1896, and later came with his parents to a farm near Kelliher, Saskatchewan. After training as a pilot with the R.F.C. in 1918, he entered the University of Saskatchewan graduating with the B.S.A. in 1924, and M.Sc. in 1926. His Ph.D. degree was received in 1934 at the University of Toronto. Dr. Russell joined the staff of the Federal Laboratory of Plant Pathology at Saskatoon in 1923 and was classified as Plant Pathologist in 1925; he held this position until his retirement in 1961. He lectured on the taxonomy of vascular plants at the University from 1938 to 1947. His research projects included work on take-all root rot of wheat and barley and loose smut of barley; while experimenting with loose smut Dr. Russell developed the hot water treatment for barley seed. He acted as scientific adviser to the Kelvington seed barley project.

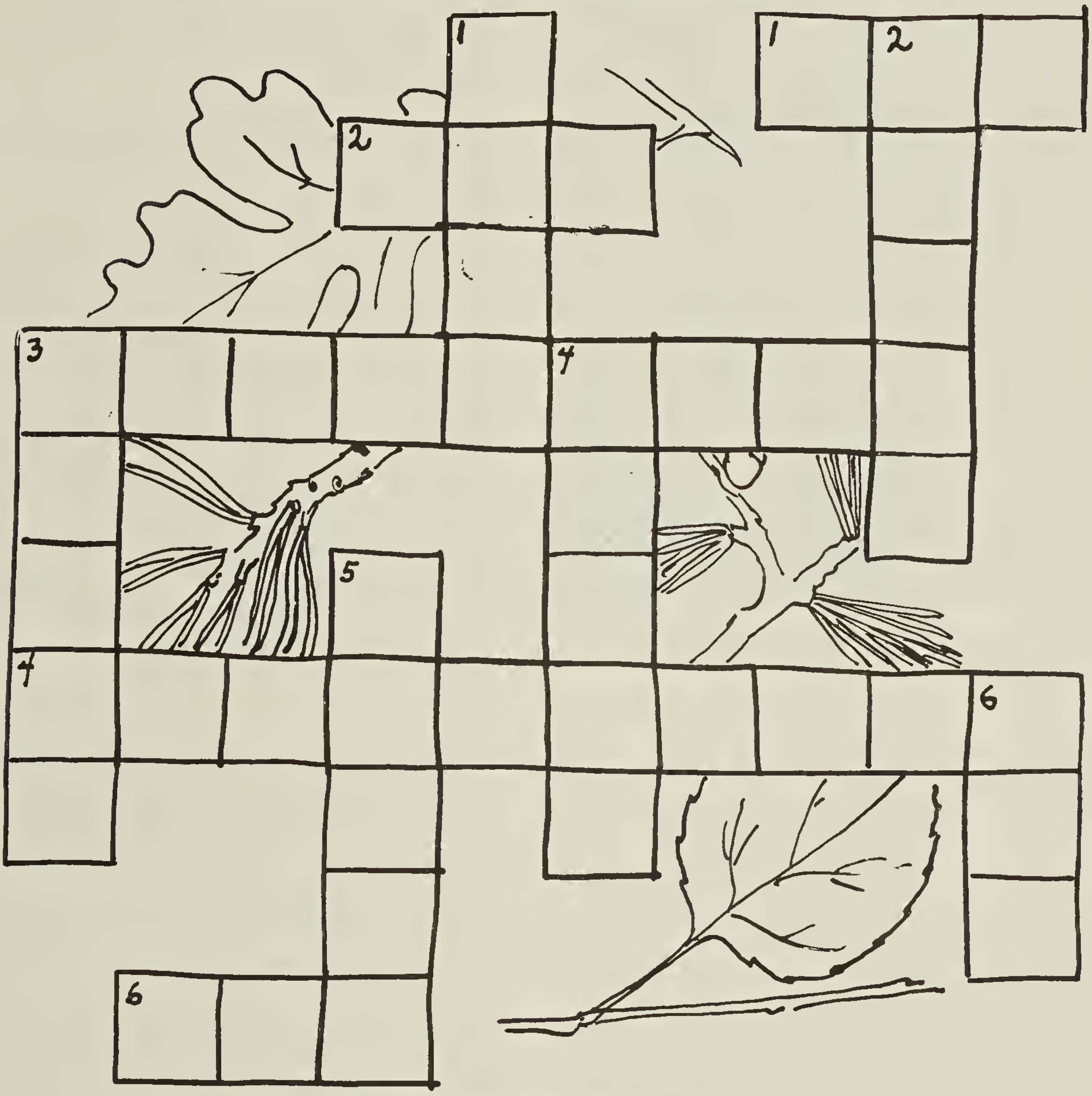
Dr. Russell was a charter member of the Canadian Phytopathological Society and served as secretary-treasurer for two years, 1945-47. He was a member of the Agricultural Institute of Canada and a charter member of the Saskatchewan Institute of Agrologists. The Canadian Seed Growers' Association made him an honorary life member in 1963.

In addition to his contributions to agriculture, Dr. Russell collected a fine library of Canadiana and was author of *The Carlton Trail,* 1954, and numerous articles; he also gave lectures on early Canadian history. He was co-author, with the late W. P. Fraser, of the *List of the flowering plans, ferns and fern allies of Saskatchewan,* 1937, which he revised in 1944 and 1954. He was also an expert photographer and his photographs may be seen in the National Museum's collection of Outstanding Wild Life Photographs.

He was a man of many talents, all of which he freely used for our benefit. When he died in Saskatoon on July 15, 1964, we lost a great scholar and a kindly gentleman.

Junior Naturalists

Edited by **Joyce Deutscher,** Regina



CROSSWORD-PUZZLE

(Theme - Saskatchewan trees)

Across
1. Grows in eastern part of province
2. A coniferous tree
3. One of our pines
4. Adjective describing a cone bearing tree
6. Has good wood for making baseball bats

Down
1. Has long needles
2. A poplar tree
3. Another name for tamarack
4. Made from tall straight trees
5. Has white papery bark
6. All trees have this

CONTESTS AND PRIZE WINNERS

In the junior section of the plant study contest the prize is awarded to Elisabeth Wagner of Regina who sent in a collection of flowers beautifully mounted on black paper and protected with plastic. Brian Irving wins the prize for his entry in the senior section of the plant study contest.

The letter writing contest was difficult to judge owing to the variety of entries—some class projects, some reports of group activity and others individual efforts. However we feel Bohdan Pylypec deserves special recognition for the work he did checking nests for the nest record scheme and his interesting report about his activities.

Comments and letter writing contest entries are to be sent to Mrs. Joyce Deutscher, 1332 Edward St., Regina, to arrive not later than January 15 to be in time for the next issue.

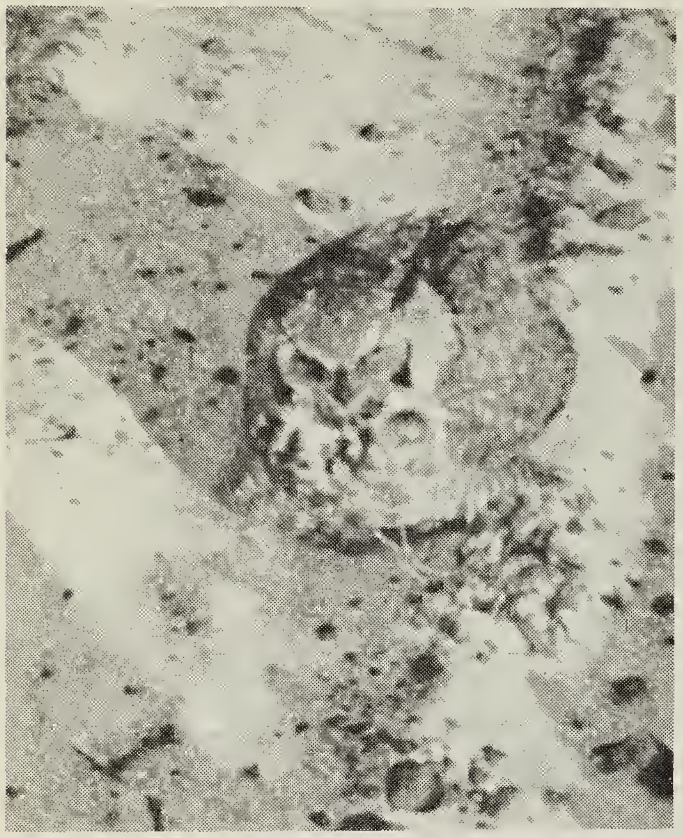


Photo by Marian Clark

GREAT HORNED OWL

GREAT HORNED OWL

by **Marian Clark,** Flaxcombe

The picture of the Great Horned Owl was taken in March, 1963. We saw it sitting out in the field on a really warm Sunday afternoon. It seemed unconcerned and contented so I went closer with my camera to see if I could get a picture of it. I was surprised to get so near, but it didn't seem to be afraid. The picture was taken with a 127 Baby Brownie camera.

(Continued from last issue)

WINTER IN THE TREGARVA DISTRICT

by **Kenneth Dickson,** Tregarva

We walked a few more feet and a big Horned Owl flew off into the snowy sky. We also saw a lot of squirrel nests but no squirrels.

It was time for us to leave. As we left the dense belt of trees it was like leaving a bird sanctuary with everything alive with song.

Then you jump into your car and make your way up to the farm yard. As you look across the fields you see Mr. Red Fox hunting for mice, a very smart fellow, for if you were to chase him he would suddenly disappear by making a quick turn and lying flat in the tall snow-filled stubble. There he would go unseen for a long time while a Snowy Owl watches from a near-by telephone pole.

We now approach the trees of the farmyard where a small flock of partridge take wing and fly to another bush.

Once inside the house we look out the window towards the apple trees in the garden only to find them loaded with waxwings feeding on last year's apples, with an odd magpie flying overhead looking for meat of some kind.

If you were to look at the cattle in the feed lot you would see a pair of Brewer's Blackbirds sitting on the bales of straw.

Thus I find winter on the prairies not so dead after all.

1964 REPORT OF THE BRANDON JUNIORS' BIRD NEST PROJECT

by **Bruce Peters,** age 14, Brandon

This year the Brandon Juniors renewed their vigor. By early summer we had 1,118 nests set out but probably not more than 1,100 were in effective condition at any one time. This total compared with the 749 which were set up in the last five years. (*Blue Jay* 21:150).

The nest line was extended north to the Rockham district and also carried into new areas in the Rounthwaite and Brandon Hills districts.

We decided this year to count only the first brood nests of the bluebirds so that there would be no chance that we might count one nesting pair twice. Several areas where we found Eastern Bluebirds last year did not have them this year but we found this species using our nests in other places where they had not been before. We also had Mountain Bluebirds in many new locations.

This year we found a large increase in the number of Tree Swallows and Mountain Bluebirds. Also there were fewer House Sparrows, House Wrens and vandalized nests this year than last year. This was encouraging. We also moved other nests from Tree Swallow territories to new areas when we found that some of the nests were not being used where we had first put them.

About 25 trips were made during the summer to check our nests, and nearly 80% were checked. The totals for the various species were:

Tree Swallows - 605, Eastern Bluebirds - 29, Mountain Bluebirds - 50, House Wrens - 26, House Sparrows 16, Vandalized Nests - 14.

The rest of our boxes were either not used, not checked, or the results were uncertain. We intend to stop setting out new nests when we reach 1200. This will enable us to keep more accurate records. By next summer we hope to have the rest of the nests out.

REPORTS BY THE GRADE 4 AND 5 CLASS AT YELLOW CREEK

THE STARLING

We have a Starling nest in our room. It is in a part of a tree trunk. A woodpecker hollowed out the trunk. The Starling chased the woodpecker out. Our teacher cut one side of the trunk away. The Starling lined its nest with barnyard straw and chicken feathers.

The Starling has many bad habits. It likes to steal other birds' nesting places. It defaces building fronts.

PURPLE MARTINS

Martins live in colonies. Our teacher had four families of martin fledglings living in a bird house. Each family had four fledglings. The old birds were busy catching insects.

During the past summer Mr. Isinger, our teacher, was at summer school. During this time some children killed all of the martins with an air gun. Parents should not buy air guns for children who are not properly trained to use them.

EXPERIENCES IN RECORDING BIRD NESTS

by **Bohdan Pylypec,** H.N., age 14,
Yellow Creek

This last summer I recorded 45 nests for the prairie nest records scheme. There was a highly unsuccessful nest rate, for 23 of the nests were unsuccessful. I found 30 nests on our farm and 15 nests by a marsh a mile away which is disturbed by humans only at haying time.

The highly unsuccessful nest rate was due to several factors. The greatest of these was cats and other predatory animals. There were many nests which had eggs or young one day and the next day they would be gone with no traces left. Rain killed several young and wind upset poorly constructed nests or slanted them until the eggs rolled out. The snowfall of September 1 also killed several young. One goldfinch nest which was built in some young willows was tilted upside down under the weight of the snow. Two fully grown young were killed and the other two left the nest. Cows upset several nests. Most of the nests which I called successful lost an egg or two or some young.

The nests were constructed out of materials which were found close at hand. This was particularly noticeable with the Cedar Waxwing nests. On our farm they made their nests out of twigs and wool which they found on the barb wire fences where the sheep lost some of their wool. The majority of the waxwings nests were near the marsh. These nests were constructed out of twigs and grasses and lined with bark shreds. The robin nests made of mud and grass also had some variations. In the spring the robin nests had much mud plastered on them but one nest built in late summer had less mud because the slough had nearly dried up. The goldfinches also had variations. Several nests were built mostly of thistledown with some plant fibers while a few nests had grass and bark shreds, too.

I was able to observe the Cedar Waxwings more than other birds because I found 15 Cedar Waxwing nests. In one nest I saw one young just emerging from the shell. When I came to the nest I saw both parents standing on the edge of it. In the nest was the young half out of the shell. Another time I saw a Cedar Waxwing just starting its nest. I was amazed to see a waxwing tugging at a piece of wool clinging to a willow. After it tugged the wool free, it flew up to the willow and packed the wool in the crotch of that willow. I was able to see the progress of the nest from that day on.

"STUMP" FROGS

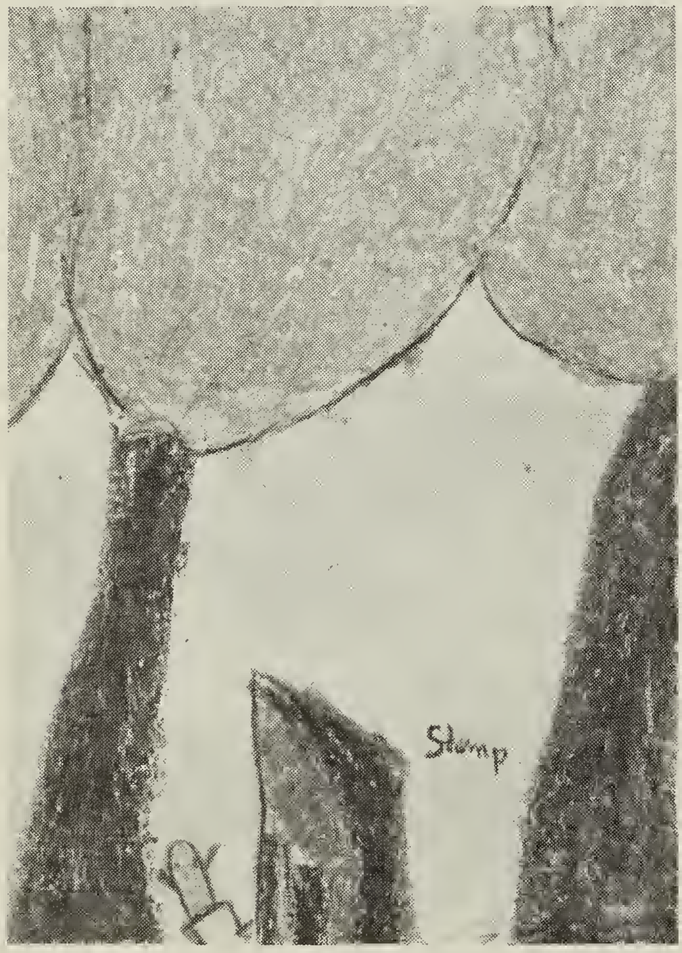
by **Douglas Cross,** age 7,
Hazel Valley School

One afternoon this fall our teacher took us on a nature science hike on September 17. We found this old tree stump that looked like an ant hill. I kicked it and it was rotten and full of ant tunnels. Then a frog hopped out. We caught it and we started to dig. We found four that day.

The next day we boys went back. We took the hatchet and chopped and dug. We found twenty-three more frogs. All told we got twenty-seven frogs. We brought them back to school and then we let them go in a muddy slough.

We wondered if these frogs were getting ready to hibernate in the tunnels of the stump. There was no water near. The stump was very wet inside. Some frogs were green and some brown. They were all the same size, about two inches long. There were only a few ants. We wondered if the frogs had eaten the rest.

Editor's Note: Douglas has raised some interesting questions. Perhaps some of our readers can enlighten him further.



"STUMP" FROG

Drawing by **Brad Lawrence,** grade 2, Hazel Valley School

THREE-FLOWERED AVENS OBSERVATIONS 1964

Note—The following is part of Brian Irving's entry in the plant study contest.

When I found this plant it was the only green thing near. On April 28 the snow had just gone on the old road allowance and since this plant is a perennial it was green when most other plants had not come up. This particular clump was approximately two feet square and most of the leaves were about two inches long. They were still rather curled up and one was just starting to show.

By the fifth, the one that was starting on the earlier visit had grown larger and another had started. On May 10 one more had matured and one had been broken or bitten off, possibly by a Richardson's Ground Squirrel. During the following week the flowering stems had shown up. There were two of them, each having three buds, although one was farther advanced than the other. Soon the former one was almost out, then it froze on June 1. It took a few days to reveal the damage but the flowers never opened. These stems remained standing until between the 22nd and 27th of June when they finally broke off.

On the 17th of June it had eleven leaves in good condition and one dried and brownish. After this it didn't gain much foliage since old leaves died as new ones came. During this time I noticed the leaves seemed to come in twos and threes. Over a period of 44 days 16 new leaves developed.

Before I made this survey I thought that the same leaves stayed on the plant throughout the entire season but I found this is not so.

This plant was growing on the roadside. When the wind was from the west a thin layer of dust was blown on the plant. All parts of the plant were covered with sticky hairs. This hair would catch and hold the dust and I thought possibly this would hinder the breathing of the plant.

On my last visit on September 5 the foliage had decreased with only a few small leaves showing.

Records of Mammals in the Lake Athabasca Area, Saskatchewan

by **Harvey Beck,** Regina

This report lists the records of mammals from the Lake Athabasca area of Saskatchewan. The area considered extends eastward from the Alberta-Saskatchewan border (longitude 110°) to longitude 105°, and southward from the District of Mackenzie-Saskatchewan border (latitude 60°) to latitude 59°.

The area north of Lake Athabasca is of low or moderate relief with exposed granite ridges and sparse vegetation. The northern shoreline is very irregular with long bays and small rocky islands. The area south of the lake is quite different. Sandy beaches run almost the full length of the lake and merge into dunes which alternate with patches of vegetation.

The Institute for Northern Studies, University of Saskatchewan, Saskatoon, financed collecting trips into this area in 1960 and 1961. Collections were made in the Stony Rapids-Black Lake area from July 1 to 13 and from August 11 to 24, 1960, by Mr. Wayne Davis; on the south shore of Lake Athabasca, 4½ miles east of William Point, from July 13 to 20, 1961; and at Yakow Lake from July 24 to 28, 1961. A total of 201 specimens (47 skins with skulls, 154 skulls only) representing 14 species was collected in 1960, and 119 specimens (81 skins with skulls, 38 skulls only) representing 7 species in 1961. The specimens collected during the two summers are now part of the collection of the Biology Museum, University of Saskatchewan.

All measurements are given in millimeters in the order of total length, length of tail vertebrae, and length of hind foot. In cases where a fourth measurement is given, it is the height of ear from notch. Figures in parentheses, following average measurements and weights, represent the extremes in size of the indicated series. Weights are expressed in grams.

The following abbreviations are used in the text: INS - records made by the two surveys for the Institute for Northern Studies; SMNH - records from the Saskatchewan Museum of Natural History, Regina; USBM - records (exclusive of INS) from the Biology Museum, University of Saskatchewan; PC - personal communication (name of contributor following).

The data obtained in 1370 trap nights in July, 1961, are presented in Table 1. The data are restricted to smaller mammals normally taken with "Museum Special" traps baited with a mixture of peanut butter and rolled oats.

ACCOUNTS OF SPECIES

The sequence of family, genera, and species, and the nomenclature as well, are in general accord with Miller and Kellogg's *List of North American Recent Mammals* (1955).

The forms treated in the following pages that have been recorded from the Lake Athabasca area, Saskatchewan, are summarized in Table 2.

Table 1. Trapping Data, July, 1961, south shore of Lake Athabasca

Species	South shore, 4½ miles east of William Pt. 1020 trap nights	Yakow Lake 350 trap nights	Total	Per Cent of total catch
Sorex cinereus	2	2	4	3.51
Eutamias minimus	1	—	1	.87
Peromyscus maniculatus	20	13	33	28.95
Clethrionomys gapperi	21	38	59	51.76
Microtus pennsylvanicus	7	4	11	9.65
Zapus hudsonius	6	—	6	5.26
Total	57	57	114	100.00

Order: INSECTIVORA

Family: SORICIDAE (Shrews)

Sorex cinereus Kerr - MASKED SHREW

Fair Point, Poplar Point, 8 miles northeast of Moose Island, mouth of Beaver River (Jackson, 1928:49); Beaverlodge Lake (SMHH); Black Lake (USBM); Stony Rapids, 4½ miles east of William Point, Yakow Lake (INS).

"One was found in the gizzard of a Hawk-Owl shot near Lorado on May 22, 1960." (PC: R. W. Nero).

Six specimens collected for the Institute for Northern Studies in 1960 and 1961 averaged 89.3 (84-94) - 35.5 (32-38) - 12 (12) mm; 2.5 (2-3.5) grams. A gravid female collected on the south shore of Lake Athabasca, east of William Point, carried 5 fetuses.

This species is probably more common than trapping data would indicate, but because of its small size and general inconspicuousness due to habits, little sign was noted.

Sorex arcticus Kerr - ARCTIC SHREW

Four specimens collected at Stony Rapids (INS) averaged 98.7 (84-110) - 36.7 (35-40) - 13.2 (12-14) mm.

Sorex vagrans Baird - WANDERING SHREW

Four specimens collected at Stony Rapids (INS) averaged 101.2 (100-103) - 42.8 (41-45) - 13.2 (12-14) mm. (Beck, 1961:185).

Sorex palustris Richardson - WATER SHREW

Outlet of small lake near Lorado (SMNH); Stony Rapids (INS).

A single specimen was taken at Stony Rapids, 20 feet from water. It was a female and measured 138-66-19 mm.; 10 grams.

Microsorex hoyi (Baird) - PYGMY SHREW

Fond-du-Lac (USBM); Stony Rapids (INS).

The single specimen, a male, taken at Stony Rapids measured 75-25-11 mm.; 3.2 grams.

Order: CHIROPTERA

Family: VESPERTILIONIDAE (Vespertilionid Bats)

Myotis lucifugus (LeConte) - LITTLE BROWN MYOTIS

Six specimens collected in August, 1945, at Crackingstone Point (USBM) averaged 91.1 (87.5-96) - 38.5 (37-41) - 10 (9-11) - tragus 8.1 (8-8.5) mm.

One was collected from a colony of 20 to 30 found roosting behind a loose vertical slab of rocks on the face of a cliff about 30 feet above the ground at Bushell, Black Bay, June 16, 1960 (SMNH).

[*Eptesicus fuscus* (Beauvois) - BIG BROWN BAT]

The Big Brown Bat has not been recorded in the area. The nearest point of recorded occurrence is Pine Lake (24 miles south of Great Slave Lake), Alberta (Soper, 1942:125).

[*Lasiurus cinereus* (Beauvois) - HOARY BAT]

The Hoary Bat was not detected in the area. It has been reported from Resolution on Great Slave Lake, N.W.T. (Anderson, 1947:32).

Table 2. Summary of species and families found in the Lake Athabasca area.

Family	Number of Species
Soricidae (Shrews)	5
Vespertilionidae (Vespertilionid Bats)	1 (2 others probably occur)
Leporidae (Rabbits and Hares)	1
Sciuridae (Squirrels and Relatives)	3 (1 other probably occurs)
Castoridae (Beavers)	1
Cricetidae (Cricetids)	6 (1 other possibly occurs)
Muridae (Murids)	1
Zapodidae (Jumping Mice)	1
Erethizontidae (New World Porcupines)	1
Canidae (Wolves, Coyotes, Dogs and Foxes)	4
Ursidae (Bears)	1
Mustelidae (Mustelids)	8
Felidae (Cats and Allies)	1 (1 other probably occurs)
Cervidae (Cervids)	3
Totals	37

Order: LAGOMORPHA

Family: LEPORIDAE (Rabbits and Hares)

Lepus americanus Erxleben - SNOWSHOE RABBIT

Mouth of Charlot River, Island in Tsalwor Lake (Harper, 1932:29); Stony Rapids, Woodcock Falls (INS).

The average measurements of the four Institute for Northern Studies specimens are: 393.2 (320-455) - 29.7 (27-40) - 62.7 (53-73) mm.

Mr. T. Heaslip, formerly of Lorado, reports "flushing" a Snowshoe Rabbit in the Lorado area on October 15, 1957, that had its upper parts still gray-brown while the underparts and legs were white.

On May 17, 1960, "some snowshoes still show white; one a few days ago was full gray, but not pure white. Abundant in Lorado vicinity in summer of 1960." (PC: R. W. Nero).

Several specimens and numerous tracks were seen on the south shore of Lake Athabasca between William and Beaver Points, and tracks were noted around Yakow Lake, in July, 1961.

Order: RODENTIA

Family: SCIURIDAE (Squirrels and Relatives)

[*Marmota monax* (Linnaeus) - WOODCHUCK]

The Woodchuck has not been recorded in the area. It has been reported from Wood Buffalo Park (Soper, 1942:133).

Eutamias minimus (Bachman) - LEAST CHIPMUNK

Poplar Point, mouth of MacFarlane River (Howell, 1929:57); Stony Rapids, Black Lake, 4½ miles east of William Point (INS).

Three specimens from Stony Rapids and one from Black Lake averaged 201.5 (197-210) - 82.7 (74-90) - 32 (31-33) - 15.7 (15-16) mm.; 47.5 (41-51) grams.

J. B. Tyrrell (1896:14D) found chipmunks in wooded country southeast of Lake Athabasca in the summer of 1892.

A portion of skull with hide attached was found in Jack Pine forest on the edge of William River, 6 miles from mouth, on July 25, 1960 (SMNH).

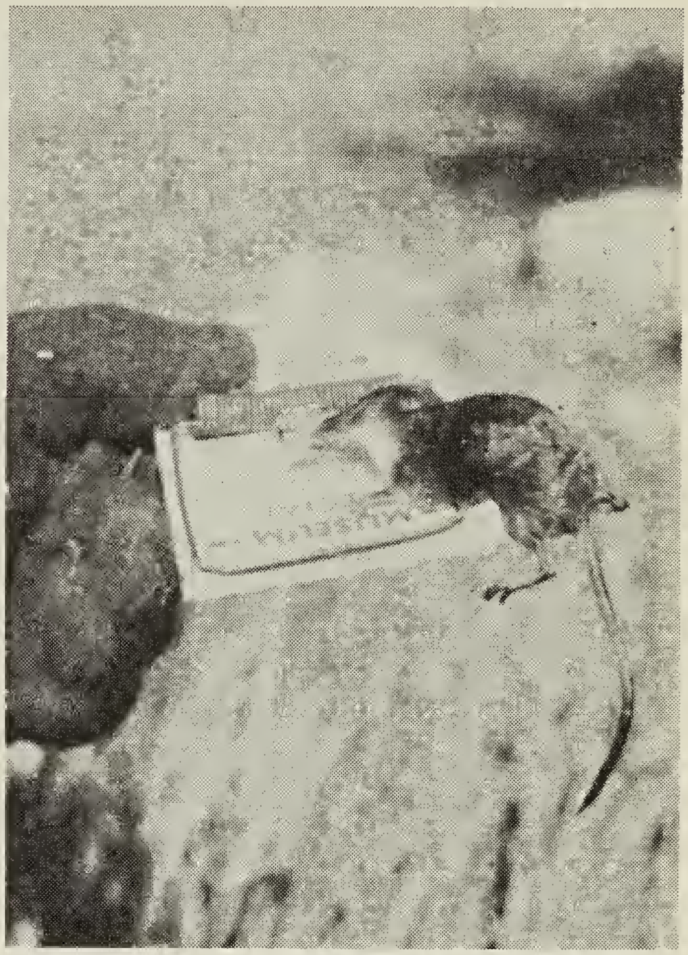


Photo by F. W. Lahrman.
Water Shrew, near Uranium City (Lorado), July 14, 1960.

Tamiasciurus hudsonicus (Erxleben) - RED SQUIRREL

Mouth of Charlot River, Tazin River below Tazin Lake (Harper, 1932:27); Fond-du-Lac (USBM); Lorado, 5 miles west of Beaver Point (SMNH); Black Lake (INS, USBM); Stony Rapids, William River - 6 miles upstream (INS).

Seventeen specimens from Stony Rapids averaged 323.9 (294-343) - 123.6 (115-130) - 50.4 (48.53) - 24.6 (21-28) mm.; 217.4 (175-263) grams.

When he explored the area between Churchill River and the eastern end of Lake Athabasca in 1892, J. B. Tyrrell (1896:14D) found Red Squirrels everywhere in the wooded country southeast of Lake Athabasca.

Several Red Squirrels were seen at Yakow Lake in July, 1961.

Glaucomys sabrinus (Shaw) - NORTHERN FLYING SQUIRREL

Two specimens collected at Stony Rapids (INS) measured as follows: female, 290-134-42-21 mm., 118 grams; and male, 229-128-43-22 mm., 129 grams.

Mr. T. Heaslip noted a flying squirrel gliding down a snow bank near Lorado at 2:00 a.m. on March 20, 1960.

One was reported seen by Heaslip several times near Lorado mill, on garbage cans, in June, 1960 (PC: R. W. Nero).

Family: CASTORIDAE (Beavers)

Castor canadensis Kuhl - BEAVER

Preble (1908:194) reported that in 1903 a "considerable number" of skins were traded at Fond-du-Lac.

On May 7, 1959, T. Heaslip reported beaver seen sitting on an ice floe on a small lake in the vicinity of Lorado.

"Beaver lodges were noted on two lakes in Lorado vicinity in summer of 1960. Indians were trapping them in May and in the second or third week I saw fresh tail and hind feet left by them at their overnight camp." (PC: R. W. Nero).

Beaver sign was seen on the south shore of Lake Athbasca in July, 1961.

Family: CRICETIDAE (Cricetids)

Peromyscus maniculatus (Wagner) - DEER MOUSE

Mouth of Charlot River (Harper, 1932:28); Fond-du-Lac, Crackingstone Point (USBM); Lorado, 5 miles west of Beaver Point (SMNH); Black Lake (INS, USBM); Stony Rapids, Woodcock Falls, 4½ miles east of William Point, Yakow Lake (INS).

Forty adults collected for the Institute for Northern Studies averaged 147.6 (122-173) - 60.4 (49-75) - 20.3 (18-22) - 17.4 (15-20) mm.; 17.2 (11-28) grams. A gravid female collected July 16, 1961, on the south shore of Lake Athabasca, carried 6 fetuses.

Approximately 29% of the small mammals trapped in 1961 were of this species. It was the second most abundant species taken, being exceeded in number only by *Clethrionomys*.

Three species of flea were found on specimens collected in July, 1961, 4½ miles east of William Point: *Monopsyllus wagneri systaltus* (Jordan), *Orchopeas leucopus* (Baker), and *Epitedia wenmanni* (Rothschild).

Synaptomys borealis (Richardson) - NORTHERN BOG LEMMING

One was collected in heavy sedge in a bog near Lorado, July 2, 1960, and the skull was collected from one found dead on July 13, 1960, on a road through the bog (SMNH).

Clethrionomys gapperi (Vigors) - GAPPER'S RED-BACKED MOUSE

Camsell Portage (USBM); Lorado (SMNH); Black Lake (INS, USBM); Stony Rapids, Woodcock Falls, Uranium City, 4½ miles miles east of William Point, Yakow Lake (INS).

Sixty-seven adults collected for the Institute for Northern Studies averaged 136.9 (124-153) - 32.6 (25-40.5) - 19.4 (18-21) - 14.6 (12-17) mm.; 26.3 (18-40) grams.

One female carried 7 fetuses, eight carried 6, seven carried 5, one carried 4, and one carried 3.

Gapper's Red-backed Mouse was the commonest cricetid found in the locations visited in July, 1961, comprising slightly over 50% of the trapping catch. Specimens were collected in all types of habitat, from Jack Pine stands on sand to sphagnum bogs.

Fleas, *Peromyscopsylla selenis* (Rothschild) and *Megabothris quirini* (Rothschild), were collected from specimens 4½ miles east of William Point; *Peromyscopsylla selenis* (Rothschild) and *Orchopeas leucopus* (Baker) from specimens at Yakow Lake in July, 1961. Dermanyssid mites were found on specimens taken in both these localities.

Phenacomys ungava Merriam - HEATHER VOLE

Crackingstone Point (Howell, 1926: 29); Lake Athabasca (Anderson, 1947: 151).

Microtus pennsylvanicus (Ord) - MEADOW VOLE

Fond-du-Lac (USBM); Lorado (SMNH); Stony Rapids, Black Lake, 4½ miles east of William Point, Yakow Lake (INS).

Thirty-four adults collected for the Institute for Northern Studies averaged 144.3 (122-179) - 34.7 (25-50) - 20.3 (19-29) mm.; 32.5 (18-60) grams. The average height of ear from notch for 19 adults was 12.9 (11-15) mm.

Three females each carried 8 fetuses, one carried 7, one carried 6, three carried 5, and one carried 4.

The 11 specimens taken in 1961 were all found in moist, grassy areas.

[*Microtus xanthognathus* (Leach) - YELLOW-CHEEKED VOLE]

This vole has not been reported in Saskatchewan. It was reported at Fort

Smith, N.W.T. (Hall and Cockrum, 1953:434).

Ondatra zibethicus (Linnaeus) - MUSKRAT

A single specimen collected at Stony Rapids for the Institute for Northern Studies measured 483-180-75-20 mm.

J. B. Tyrrell (1896:13D) reports seeing muskrat swimming in all the streams southeast of Lake Athabasca during his explorations in the summer of 1892.

In the second week of May, 1960, one was seen in a small pool south of Lorado (PC: R. W. Nero).

A few muskrat were seen between Stony Rapids and Black Lake in the summer of 1960, but there appeared to be no great population of them (PC: W. Davis).

Family: MURIDAE

Mus musculus Linnaeus - HOUSE MOUSE

A flattened specimen, unquestionably this species, was found in an alley in Uranium City on June 29, 1960." (PC: R. W. Nero).

Family: ZAPODIDAE (Jumping Mice)

Zapus hudsonius (Zimmerman) - MEADOW JUMPING MOUSE

Near Beaver Point (SMNH); Stony Rapids, Black Lake, 4½ miles east of William Point (INS).

Twenty-one specimens collected for the Institute for Northern Studies averaged 201.8 (192-213) - 120.9 (112-130) 30.8 (29-32) - 13.5 (12-15) mm.; 14.8 (10-22) grams. Two gravid females carried 3 and 6 fetuses respectively.

The specimens collected 4½ miles east of William Point in July, 1961, were found in willows and grass at the edge of the lake.

Family: ERETHIZONTIDAE (New World Porcupines)

Erethizon dorsatum (Linnaeus) - PORCUPINE

One seen near Lorado, June 6, 1960. About 36 Porcupine hairs were found in the lining of an active nest of a Swainson's Thrush *(Hylocichla ustulata)* near Lorado on June 28, 1960." (PC: R. W. Nero).

Tracks were observed in the vicinity of Yakow Lake in July, 1961.

Order: CARNIVORA

Family: CANIDAE (Wolves, Coyotes, Dogs, and Foxes)

Canis latrans (Say) - COYOTE

T. Heaslip reported a coyote howling during the night of April 10, 1960, near Lorado. There was a full moon at the time.

Tracks, which appeared to be of coyote, were seen in the sand of the south shore of Lake Athabasca, west of William Point, in July, 1961.

Canis lupus, Linnaeus - GRAY WOLF

Carcasses were noted at the mouth of the Charlot River (Harper, 1932:26). Tracks were seen at Thainka Lake (ibid), 5 miles west of Beaver Point (Nero, 1961:63), and, in July, 1961, 4½ miles east of William Point.

T. Heaslip noted one running along a road near Lorado at 2:00 a.m., March 3, 1960.

Alopex lagopus (Linnaeus) - ARCTIC FOX

Mr. Pat Kerr of Gunnar reported on February 4, 1962, that "during the fall and so far this winter the trappers around Gunnar have caught several Arctic Fox."

Vulpes vulpes Linnaeus - RED FOX

Stony Rapids, Harper Lake (PC: C. S. Churcher); 8 miles southwest of Beaver Point (Nero, 1961:66).

Signs indicated predation on the Arctic Tern *(Sterna paradisaea)* at their nesting ground on the south shore of Lake Athabasca (Nero, 1961: 66).

Tracks were seen 4½ miles east of William Point and near Yakow Lake, in July, 1961.

Family: URSIDAE (Bears)

Euarctos americanus Pallas - BLACK BEAR

J. W. Tyrrell (1897:73) reported that in July, 1893, 7 miles upstream from Wolverine (=Chipman) Lake, "I suddenly came within full view of an immense black bear seated on his haunches and occupied in rubbing the mosquitoes off his nose."

One was seen near Stony Rapids garbage dump, and fresh droppings and tracks were seen near Woodcock Falls, in July, 1960 (PC: W. Davis).

Sign was noticed 5 miles west of Beaver Point in 1960 (Nero, 1961:63) and was common 4½ miles east of

Photo by G. W. Argus

Black Bear in the sand dunes near Yakow Lake, south shore of Lake Athabasca, July 21, 1962.

William River in July, 1961. Tracks were present in the sand around Yakow Lake, and a black bear was seen in a sphagnum bog near Yakow Lake on July 27, 1961.

Family: MUSTELIDAE (Mustelids)

Martes americana (Turton) - MARTEN

Chipman Lake (Scotter, 1961:133).

Tracks were observed near Yakow Lake, July 25, 1961.

Martes pennanti (Erxleben) - FISHER

Crackingstone Creek (SMNH).

Mustela erminea, Linnaeus - ERMINE

Poplar Point, Fair Point, Harper Lake (Hall, 1951:118).

On August 21, 1959, T. Heaslip saw one hunting mice at an old warehouse, Lorado.

"Indians at Stony Rapids reported that ermine are quite plentiful in the area and are ofen caught in the winter." (PC: W. Davis).

Mustela rixosa (Bangs) - LEAST WEASEL

Beach at Beaverlake Lodge, Eldorado townsite on July 13, 1960 jaw fragment (SMNH).

"Small weasel tracks identified as this species in dunes (south shore Lake Athabasca) on July 22, 1960." (PC: R. W. Nero).

Mustela vison, Schreber - MINK

Tazin River 10 miles below Thainka Lake (Harper, 1932:23).

"Residents of Stony Rapids report them near the town." (PC: W. Davis).

Gulo luscus (Linnaeus) - WOLVERINE

Near Fond-du-Lac (Seton, 1911:253).

Tracks were seen near Yakow Lake on July 25, 1961.

Mephitis mephitis (Schreber) - STRIPED SKUNK

"Tracks were seen 5 miles west of Beaver Point, July 9, 1960. Tracks of several were seen in the dunes on July 22, 1960. One was 'flushed' by a dog on August 7, 1960, edge of beach, south shore of Lake Athabasca, west of Beaver Point." (PC: R. W. Nero).

Tracks were noted in the dunes 4½ miles east of William Point in July, 1961.

Photo by F. W. Lahrman

Moose crossing the sand dunes near Beaver Point, Lake Athabasca, July, 1960.

Lutra canadensis (Schreber) - RIVER OTTER

J. B. Tyrrell (1897:166F) reports that otter "live on the banks of the streams throughout the country" southeast of Lake Athabasca.

Tracks were seen in the sand near water on the south shore of Lake Athabasca, east of William Point, in July, 1961.

Family: FELIDAE (Cats and Allies)

Felis concolor Kerr - MOUNTAIN LION

An employee at Eldorado, on June 21, 1960, reported that a strange animal had been seen two weeks previously at Eldorado. The description was that of a Mountain Lion. The previous year a similar animal had been seen near Lorado (PC: R. W. Nero).

Lynx canadensis Kerr - LYNX

Tsalwor Lake (Harper, 1932:26).

On July 20, 1959, T. Heaslip saw a lynx pursuing a rabbit along a road at Lorado at 2:00 a.m. "One was seen near Lorado on edge of road about third week of July, 1960." (PC: R. W. Nero).

Tracks were seen in the sand dunes 4½ miles east of William Point, and in the vicinity of Yakow Lake, in July, 1961.

Order: ARTIODACTYLA

Family: CERVIDAE (Cervids)

Odocoileus hemionus (Rafinesque) - MULE DEER

Deer tracks were identified in the dunes west of Beaver Point on July 25, 1960 (PC: R. W. Nero), and 4½ miles east of William Point in July, 1961. Although no deer were seen, this is probably the species that occurs.

Alces alces (Linnaeus) - MOOSE

While exploring the country between Lake Athabasca and the Churchill River in the summer of 1892, J. B. Tyrrell (1896:13D) found that the moose "roams through the more thickly wooded parts of the country as far north as Stone (=Fond-du-Lac) River."

Harper Lake (Peterson, 1952:27). Sign was noted at Tazin and Thainka

Lakes (Harper, 1932:30), 5 miles west of Beaver Point (Nero, 1961:63), in Lorado vicinity in summer, 1960 (PC: R. W. Nero), and at Yakow Lake in July, 1961. At least one moose was killed at Middle Lake in August, 1960 (PC: W. Davis). A bull, cow, and calf were seen 4½ miles east of William Point on July 15, 1961.

Rangifer arcticus (Richardson) - BARREN GROUND CARIBOU

Banfield (1954:16) reported Barren Ground Caribou from the "northern shore of Lake Athabasca southward . . ." J. B. Tyrrell (1896:63D) stated that in 1892 Fond-du-Lac was "on one of the principal lines of travel of the Barren Ground Cariboo, in their regular migrations north and south." Residents of Uranium City report seeing them in varying numbers every year. Occasionally caribou wander through the town, but they are more common east, toward Pine Channel.

"On April 28, (1957), more than 14,000 caribou crossed Lake Athabasca between Stony Rapids and Camsell Portage. This mass movement had a depth of nearly 100 miles and extended toward the northeast on a front 150 miles wide." (Kelsall, 1960:7).

An antler was seen at Thainka Lake (Harper, 1932:30), and antlers were noted 4½ miles east of William Point and at Yakow Lake in July, 1961.

T. Heaslip made the following records of caribou:

April 27, 1957. Caribou seen crossing Nero Lake in late evening.

April 30, 1957. Many caribou crossing Nero Lake at sunset.

May 1, 1957. Caribou crossing Martin Lake.

April 27, 1960. Seven caribou seen crossing Beaverlodge Lake.

Fresh tracks of one were seen in the second week of May, 1960, at Lorado (PC: R. W. Nero).

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A GUIDE TO SASKATCHEWAN MAMMALS

by **W. H. Beck**

Still available in the series of SNHS Special Publications is the bulletin that launched the series, Harvey Beck's **Guide to Saskatchewan Mammals,** price 50 cents. This 52-page guide, with maps, sketches and photographs, was published in 1958. Order from Frank Brazier, Box 1121, Regina.

Consider one or more of the Society's Special Publications as Christmas gifts. An order sent to the Treasurer will get a prompt reply.

Wolves reported in the Val Marie district

by **J. David Chandler,** Shaunavon

Recently there have been several reports of wolves being in the Val Marie district. On July 26, 1964, Gordon Chandler, driving across country less than a mile from the home corrals, saw an animal which he took to be a wolf start out from a stand of grain in a reclaimed slough bottom. He said it loped off for the hills, its body stretched out in long leaps, but stopped to look back several times. It was reported as much too large and dark to be confused with a coyote. About two hours later I tried to track it, circling a four mile area. We were remarkably fortunate in catching the briefest glimpse, but at quite a distance, as it slipped around a knoll, heading for a grain field. Although we we were unable to flush it again, we found some interesting tracks in another part of the field, rather indistinct, but presumably those of the wolf. They were running parallel to, and in the same direction as the tracks of what appeared to be a cow and a calf. We followed the tracks to a place where the grain was somewhat trampled; whether the cow paused to graze, or to take a stance of defense we weren't experienced enough at tracking even to surmise. The prints of the animal measured approximately nine inches from the outer edge of the right print to the outer of the left (when the two prints were opposite each other).

Early in the spring of 1964, I started what, at first, appeared to be a coyote. When I raised my binoculars it appeared too large for this species, and, unlike a coyote, it retreated slowly, looking backward as it went, and I guessed that it was a wolf. It was at this approximate date that Sidney Chandler and F. Kornfeld (adjacent rancher) found the well-eaten carcasses of three calves.

Wolves were also reported in the fall of 1963: Bill Hanson, of Orkney, reported pursuing one for some distance in a pick-up truck. And another one was reported seen between Orkney and Val Marie by a lady who has lived in the north and who says she knows a wolf when she sees one.

Lynx at Edenwold

by **Robert W. Nero,** Regina

Evidence of the persistence of the lynx *(Lynx canadensis)* in southern Saskatchewan (See *Blue Jay*, 22:35-36, 84-86, 120) was obtained when a female was shot by deer hunters at Edenwold on November 11, 1964. According to our informant, John H. Mulhern, student at the Regina Campus, when he and his friends returned to a deer which had been shot and dressed and left lying on the ground for several hours in this parkland area, they found a lynx crouched over the carcass. It had already eaten the tail and most of the hindquarters of the deer. It seemed unusually fearless and was easily dispatched. Identification of the specimen was made on November 12.

It is unfortunate that wild animals not specifically designated as protected should be killed for no particular reason. Doubtless the lynx will not long remain an element of the parkland and prairie fauna, being far out of its customary range, and the killing of these wanderers from the north will not affect the northern population. However, one would like to urge hunters to learn to enjoy wild animals without necessarily destroying them.

Two Records of the Yellow-bellied Racer in Saskatchewan

by **William J. Maher,** University of Saskatchewan, Saskatoon, and
W. Harvey Beck, Saskatchewan Museum of Natural History, Regina

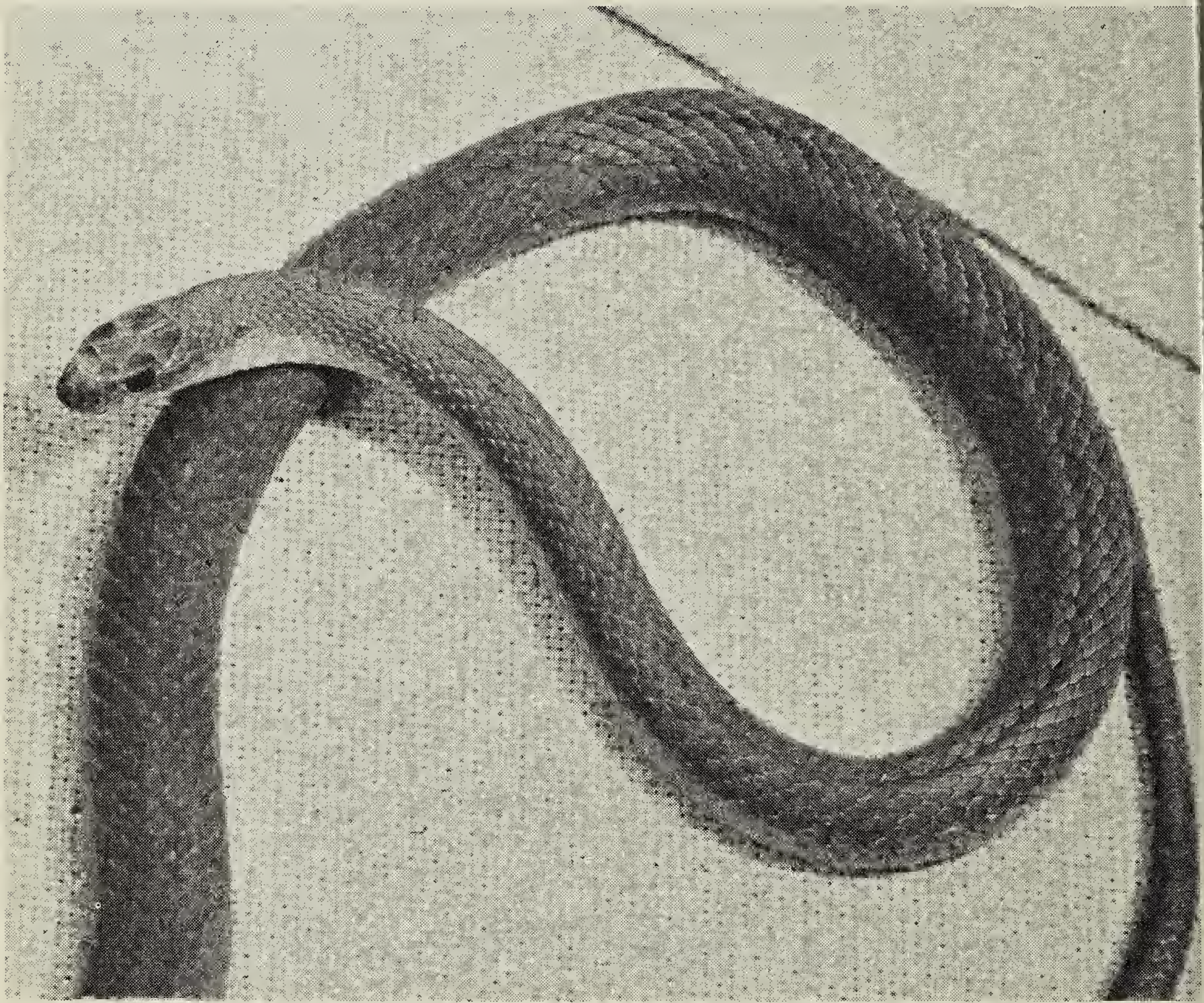

Photo by Norman Ferrier

A Yellow-bellied Racer *(Coluber constrictor flaviventris)* was collected, along with five Western Rattlesnakes *(Crotalus viridis),* on the Walt Larson ranch six miles east of Val Marie, Saskatchewan, on October 4, 1964. The snakes were collected by Mr. N. Lacoursiere of Ponteix who took them to the University of Saskatchewan Biology Museum in Saskatoon. Another racer collected on the same date at the same locality was submitted by Dr. G. R. Sherven to the Saskatchewan Museum of Natural History in Regina.

These are apparently the first records of the species for the Canadian prairies. The Yellow-bellied Racer occurs south of the Saskatchewan border in Montana and North Dakota and its presence in the Val Marie area, which has other southern affinities, is not surprising.

The specimen in Saskatoon is 107 cm (42 inches) long, and the one in Regina is 95 cm (37 inches) long. They are colored grayish-blue dorsally and yellow ventrally. These racers are identified by the color, smooth keelless scales, and the presence of 17 scale rows on the anterior part of the body. The anal plate and all caudal scutes are divided.

Notes and Letters

BLUE JAY RECEIVED FOR UNIVERSITY LIBRARY

May I thank you publicly for having brought the need of this University for a set of *The Blue Jay* to the attention of your readers. I received a number of letters offering one or more issues of *The Blue Jay*, and am most grateful to these individuals for taking the trouble to write to me.

I am very happy to be able to acknowledge receipt of an almost complete set of *The Blue Jay* from Mrs. Lillian A. Verreault, R.N., of Vancouver, B.C. Mrs. Verreault may be identified by your Saskatchewan readers as Frank Roy's aunt. This is a most handsome gift; by having a set in the library here it will be possible as long as the university exists, for students of natural history to learn what has been published locally about the wild life and plants of the prairie provinces during the 22 years since 1942.

May I list the few issues which we still lack, If anyone can locate or spare any of these I would be very pleased to hear from them Vol. 1, No. 1; Vol. 5, No. 3 and No. 4; Vol. 6, No. 2, 3 and 4; Vol. 7, No. 1, 2 and 3; Vol. 12, No. 2.

Apart from these we now have available to students in southern Alberta a complete set of *The Blue Jay* from Volume 1 to Volume 21, through the kindness of Mrs. Verreault.—*M. T. Myres,* Dept. of Biology, University of Alberta, Calgary.

LOSS OF SURFACE WATER

This summer began by being very dry in the Saskatoon area; in fact, there was very little water in the sloughs even in April. I am wondering if there is something more the governmental authorities should be doing about water conservation, particularly as related to wildlife conservation. Would anything be gained by planting trees and shrubs around the edges of sloughs and pot-holes? I can well recall my boyhood days in the Wadena district, 1910-1918; the sloughs were full of water nearly all summer, and willows, poplars and native grass grew in abundance all around the sloughs. There were not so many municipal roads with effective ditches to drain away all the water. The over-all picture with respect to surface water and drainage has changed a great deal since 1918.

I do not have much time to give to natural history but I do enjoy *The Blue Jay* very much indeed. I am convinced that it should be in every high school in the province and I think it would be well to have it in every public school as well.—*D. R. Robinson,* Horticultural Department, University of Saskatchewan, Saskatoon.

MOCKINGBIRD AT SKULL CREEK

We have seen a Mockingbird here twice this year, on the 15th of July and again on the 12th of August. It might also be of interest to report an albino Killdeer that Marjorie and I saw on a drive up the coulee from the house on the 7th of August.

A couple of times within the last month [letter of August 14, 1964] we have seen tracks of Raccoon along the creek and yesterday we heard reports of Mountain Lion being seen within 40 miles of here. — *Steve A. Mann,* Skull Creek.

HUMMINGBIRD RETURNS TO NEST

In the September, 1964, issue of the *Blue Jay* you published the story of our experience with the nesting in 1962 and 1963 of the Rufous Hummingbird. Since the 1964 story is now complete, I thought you might like to have it, since it includes some very interesting information from Dr. Cliff Carl of Victoria.

To continue: On May 3, 1964, "our" little female Rufous (with the same dark throat patch) was observed building her nest in the original cedar tree, but on the south side instead of the north side. This was a good three weeks later than she began her first nest in 1963. We saw her mate, and he remained around until she was sitting on the eggs.

On June 15th two babies left the nest and when they were about 10 days or so old, we saw a male Rufous in the garden two or three times. We assumed the mother must have again made a second nest, but we were unable to discover where.

Our questions are:

1. Is it common for Rufous hummingbirds to build two nests in one season? If so, the male must "sneak back" from his hideout.

2. Do you think we are correct in our assumption that the dark throat patch makes this female different enough so that we recognize her as the same one?

3. Is it common for hummingbirds to rebuild an old nest, as this one did in 1963?

4. What is your theory regarding the disappearance of the male after the eggs are laid?

Dr. Cliff Carl's answers are as follows:

1. It is not unusual for our common hummingbird, the Rufous, to build two nests in one season. As you have observed, the nesting is rather long drawn out, and one authority states "It seems probable that each pair raises two broods during the spring and summer."

2. C. J. Guiguet, Ornithologist at the Provincial Museum, states that most female hummers have a small red patch on the throat; it varies in size from almost nothing to a conspicuous spot. The throat patch cannot, therefore, serve as a recognition mark. However, a nest built on the same site on two consecutive season is likely to be constructed by the same female.

3. Building a second, or even a third nest, on the remains of an old nest is a normal procedure for this bird. Actually it is not re-building an old nest, but constructing a completely new one on the original site.

4. So far as I know, the mystery of the male's disappearance after the eggs have been laid has never been solved satisfactorily. In any event the male's behaviour does not follow a set pattern. There are records of male's incubating eggs, and it is not uncommon for an odd male to hang around until late in the season. However, most leave the nesting area shortly after mating, and since some appear in alpine country in late summer, it is believed that most males retire to the mountains where they follow the succession of wild flowers to higher elevations."

I hope *Blue Jay* readers will find this information interesting — *Joan Woolton,* Vancouver.

BALD EAGLE

We had a pleasant surprise this summer when we were eating a picnic lunch in a clearing in the pines some six miles south of Waskesiu Lake in the Prince Albert National Park. We had been picking blueberries and to rest our aching necks we were leaning well back against a bank when suddenly our eyes were drawn to a white flash in the clear sky. It was as though a bright light had suddenly been turned on away up there against the blue. A second similar white spot appeared and the two were joined by a rufous-colored body. It was a large bird soaring straight upwards and the sun reflected off his snowy tail and white head. Its body and upper wings were a rufous brown. This large bird rode the air currents with scarcely a move of its wide outspread wings like a vulture or a large hawk. We noted all the details, then turned to Tory Peterson's revised field guild to the Western birds. By a process of elimination we were left with only one bird that it could possibly be and that was the Bald Eagle.—*Mrs. R. E. Swain,* Saskatoon.

FRIENDS FROM THE WILD

The small brown cotton-tail rabbit common to bush areas is a friendly little animal. We have many pairs of them here, and have found they are fearless in their association with people. When they are near the corrals where the cattle are fed in the winter, they watch for the men with grain to feed the calves. One of my sons found one little rabbit waiting for him every morning. He used to spill out a handful of oats each day for the little fellow, moving the pile closer to himself each day. Before too long, he could put the grain on the broad toe of his overshoe, and standing motionless, wait for his little friend to come and eat it.

Among the wild birds, the swallows come closest to our homes. We have a pair that has come back for many years, or has passed the tradition to their descendants. Each year they announce their arrival by spending the whole day swooping and dipping swiftly back and forth in front of the house, chirping and twittering madly After they are sure they are noticed, they make a tour of the other buildings, but they always end by building their nest in the same old shed. On some occasions I have found it necessary to intervene in their work to save it from destruction. Once I nailed a small board under the nest, as a three-day rain was threatening to weaken the structure and let it fall to the ground. Another time the nest had been fastened to some material needed for repairs, so I carefully moved it, young birds and all, to a new location. The parents watched while the move was being made, but did not seem to be unduly alarmed. When I was through they promptly restored the mental equilibrium of their squeaking offspring with a meal.

We have been able to attract goldfinch to our yard by providing their favourite food. About ten years ago there was only one pair here. When I found that their preferred food was the seed of roadside sunflowers, I gathered some of the seed and planted it near the house in one of the flower beds, as well as planting tame sunflowers. We have been amply rewarded by the sight of many pairs of goldfinch.

Then there are the kingbirds that came to the clothes line many years ago and borrowed threads and bits of colored yarn to build their nests. The children followed the birds and were able to identify the materials in their nest! Since the advent of rural hydro, I do not use the old system of hanging out my family wash, but when we see the kingbirds return in spring, we hang pieces of yarn and string on the fence for them. — *Mrs. L. McDowell,* Piapot.

"Doc" Dixon and Ruth Chandler with midget tractor and a float of the Val Marie prairie dog town in the Shaunavon Rodeo parade.

The Blue Jay Bookshelf

BIRDS OF THE LAKE ATHABASCA REGION, SASKATCHEWAN. By Robert W. Nero. 1963. Saskatchewan Natural History Society, Special Publication 5, 143 pp. Illustrated. $2.50.

This useful and attractive publication presents an excellent account of the bird life of the Lake Athabasca region, Saskatchewan. Actually it considerably transcends the northwestern part of the province and gives a much clearer picture than has been possible heretofore of bird distribution in northern Saskatchewan in general south to Clearwater and Churchill rivers.

The Lake Athabasca data are based mainly on the author's very creditable field work there in the summers of 1960, 1961, and 1962 and he has included also data from all other available sources, both published and unpublished, notable among which are notes made by Francis Harper in 1914 and 1920, and by T. M. Shortt in 1945.

The copiously-annotated list of birds contains much definite and authentic information on distribution, status and dates for each species in the area, and for many of these species there are notes also on behavior, aspects of the breeding cycle, and ecology. Substantial additions are made to the known breeding ranges of several species, and nesting is established for a number of others where it was only suspected heretofore. Valuable data are given also for more eastern parts of northern Saskatchewan, notably Hasbala Lake in the extreme northeast.

The introduction includes a general account of the author's three expeditions, a good summary of previous work by others, a description of the area, notes and comments on bird distribution there, and a map of the area. The report is illustrated by photographs of bird habitats and other subjects. Interesting drawings by Ralph D. Carson are scattered through the text. This report adds vastly to our knowledge of the birds of Saskatchewan.—*W. Earl Godfrey,* National Museum, Ottawa [Reprinted from the Canadian Field-Naturalist, 78:120, April-June, 1964.]

THE WHITE-TAILED DEER. By John Madson. 1961. Conservation Dept., Olin Mathieson Chemical Corp., East Alton, Ill. 100 pp. Illustrated. $1.00.

The white-tailed deer is one of our most common deer, scattered all over the North American continent. In different places it is known by different names. Although it is now abundant, it is not an indigenous species but an immigrant which arrived here over the land bridge in the Miocene period.

Those readers who have been following the OLIN series of nature studies will find this one no less interesting and informative. Many scientific facts are presented, but in such a way as to make the book easy reading.—*Anthony J. Hruska,* Gerald.

BIRDS OF THE ELBOW

J. Frank Roy's **An Introduction to the birds of the Elbow,** published by the Saskatchewan Natural History Society at the time of the 1964 Summer Meeting at Beechy, makes a careful survey of the birds of the area, based principally on the author's personal observation over a period of 30 years, but with additional records from Saskatchewan Museum of Natural History parties working along the South Saskatchewan River.

The bulletin has an attractive cover designed by Mrs. Mollie Lawrence, and a map of the Coteau area which the list covers. Price: 75 cents. Available from Box 1121, Regina, Sask.

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THE PRESIDENT'S MESSAGE

by **A. O. Aschim,** Prince Albert

The Annual Meeting of the Saskatchewan Natural History Society is over for another year. The meeting was interesting and informative, with an illustrated lecture by our guest speaker, Mr. R. York Edwards, that left us much to think about. I hope that the seed of his suggestions fell on fertile fields. Mr. Edwards' message appears as a feature in this issue, p. 134.

Although our yearly meeting is over, the work of our Society never ends. As your president for the coming year, I plead and invite every member to take a more active part in this Society, be it by reading a book, writing an article, or following a research project. All these activities are important, not only to the Society as a whole, but probably more so to your own enjoyment and your sense of belonging to a worthwhile organization.

May I wish the very best to everyone and may your efforts in the coming year yield even greater understanding of Nature's treasures.

CONSERVATION AWARD— 1964

At the recommendation of the Executive the Saskatchewan Natural History Society's Conservation Award for 1964 is being given to Douglas E. Wade for his devoted interest in natural history and conservation. Professionally and personally, Doug Wade maintained a firm and committed stand on conservation matters, the kind of attitude from which the whole community and even the land itself benefits.

We are impressed by the extent to which this man and his family, in less than three years, sought out and appreciated natural areas in Saskathewan, from Wildnest Lake in the north, to the Big Muddy Valley in the outh, but no less to the remnants of hort grass prairie and prairie sloughs f the wheatlands. Their love of the and extended to recording numerous spects on colour slides which were seen and enjoyed by many others; oubtless, in his new position in the tate of Illinois, Doug is currently howing some of the best of Saskathewan to still others.

We note that Doug Wade wrote 10 rticles and 11 book reviews which were published in the *Blue Jay*. Many will be aware that the books Doug selected to review were outstanding conservation works, and it will also be recalled that his reviews contained direct and pointed conservation messages. Through his contacts with the world beyond our boundaries Doug Wade kept us aware of current trends in nature use and preservation.

We reflect on the fact that the provincial government has established canoe routes in the north, and has published pamphlets describing these routes; that in the Cypress Hills there now exists a series of Nature Trails; that Outdoor Education is an active field in Saskatchewan; that *Wilderness* is being included as an aspect of park planning—and we take pride in suggesting that Doug Wade played a considerable role in the establishment of these advanced concepts in Saskatchewan.

The Wades' interest in nature extended to a multitude of services to the Society. Doug, and his wife, Dot, contributed freely and joyfully to a variety of committees and activities—just call them on the phone and they were always ready to pitch in. Their enthusiasm greatly encouraged others. This support of the Society, we submit, is a contribution to conservation.

Doug's thinking has influenced our Society more than we know—frequently we now find ourselves expressing thoughts given to us in the past by Doug. Doubtless the impact of his ideas will continue to be felt in Saskatchewan for many more years; we feel that this has immeasurably benefitted conservation causes. We miss him and his family and we hope that this Conservation Award will express our appreciation for his work in support of our mutual objectives.—*R. W. Nero,* Regina.

THE CLIFF SHAW MEMORIAL AWARD

The Cliff Shaw Memorial Award was presented to Hans Dommasch of Saskatoon for his valuable contribution to *The Blue Jay* during the past year. All readers will recall his splendid photographic stories. The award was presented at the Annual Meeting, October 17, by Dr. Stuart Houston who told the history of the award and of Cliff Shaw's association with natural history in Saskatchewan.

SASKATCHEWAN NATURAL HISTORY SOCIETY

FINANCIAL STATEMENT, 1964

INCOME

Memberships (including sales of Blue Jay)			$4,581.57
Spec. Pub. #1—Guide to Sask. Mammals		$ 57.48	
Spec. Pub. #2—Birds of the Sask. River		86.15	
Spec. Pub. #3—Birds of Regina		113.15	
Spec. Pub. #4—Blue Jay Index		41.00	
Spec. Pub. #5—Birds of Lake Athabaska		426.44	
—Birds of the Elbow		18.50	
Sales of other merchandise	$1,544.10		
Less cost of sales	1,221.95		
		322.15	
Annual Meeting, 1963 (net)		55.50	
Summer Meeting, 1964 (net)		144.42	
Donations		140.17	
Interest (bank account and bonds)		75.99	
Advertising		20.00	
			1,500.95
			$6,082.52

EXPENSE

Printing of Blue Jay (4 issues)	$3,329.60	
Printing and postage re Newsletter	198.94	
Printing of Birds of the Elbow	185.65	
Honoraria	617.44	
Advertising and promotion	581.17	
Postage	238.90	
Office Supplies	86.38	
Subscription renewal inserts	31.47	
Bank charges less U.S. premium	27.83	
Executive meetings and misc. expense	63.24	
		$5,360.62
EXCESS OF INCOME OVER EXPENSE		$ 721.90

STATEMENT OF ASSETS AND LIABILITIES AS OF SEPT. 30, 1964

ASSETS

Cash in bank (current)	$4,004.25
Cash in bank (savings)	1,919.55
Government of Canada bonds	300.00
Stock	483.91
	$6,707.71

LIABILITIES

Trust fund (re Special Refuge or Sanctuary)	$ 647.40	
Suspense Account	5.42	
		$ 652.82

NET WORTH

Balance as at Sept. 30, 1963	$5,332.99	
Increase for year ending Sept. 30, 1964	721.90	
		6,054.89
		$6,707.71

THE SASKATCHEWAN NATURAL HISTORY SOCIETY

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President	A. O. Aschim, Box 1481, Prince Albert
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d Haysom, Regina; George MacMillan, Maple Creek;
F. B. Tayor, Moose Jaw; C Ward, Saskatoon.

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toon; David Chandler, Shaunavon.

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iam; **Assistant Editors:** Margaret Belcher, Robert W.
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MEMBERSHIP

chewan Natural History Society is open to all persons
nature. The classes of membership are as follows: **Regular,** $2.00; **Supporting,** $3.00; **Sustaining,** $5.00; **Junior** (including schools), $1.00. The **Blue Jay** is sent without charge to all members not in arrears for dues.

The members at the Annual Meeting in Regina, October 17, 1964, were urged to give additional assistance to the Society by becoming **supporting** or **sustaining** members and by entering the membership drive. Details of prizes in Newsletter or from the treasurer.

Send all renewals and new memberships to Frank Brazier, **Blue Jay, Box 1121, Regina, Sask.**

REPRINTS

Inquiries about quantities of reprints of any article printed in the **Blue Jay** should be sent to Midwest Litho, Saskatoon, Sask. Contributors wishing a few extra copies of any **Blue Jay** may get them at cost. Requests for these should be made to the Editor when material is submitted for publication.

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		322.15	
Annual Meeting, 1963 (net)		55.50	
Summer Meeting, 1964 (net)		144.42	
Donations		140.17	
Interest (bank account and bonds)			
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The members at the Annual Meeting in Regina, October 17, 1964, were urged to give additional assistance to the Society by becoming **supporting** or **sustaining** members and by entering the membership drive. Details of prizes in Newsletter or from the treasurer.

Send all renewals and new memberships to Frank Brazier, **Blue Jay, Box 1121, Regina, Sask.**

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Female Polar Bear with year-and-half-old cub. Photo by Richard W. Fyfe

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